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**An Atlas of Ionospheric F-Region Structures as  
Determined by the NRL-747/S3-4 Ionospheric  
Irregularities Satellite Investigation**

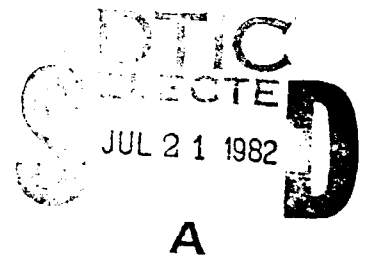
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20. ABSTRACT (Continued)

on communication and surveillance systems. In this report the experimental technique is briefly described, associated data sets outlined, and a complete catalogue of ionospheric density profiles is presented covering over 600 orbits of data during the period March-September 1978.

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A

**AN ATLAS OF IONOSPHERIC F-REGION STRUCTURES  
AS DETERMINED BY THE NRL-747/S3-4 IONOSPHERIC IRREGULARITIES  
SATELLITE INVESTIGATION**

**1. INTRODUCTION**

The Department of Defense has a continuing need for an improved understanding of plasma processes in the near-Earth charged-particle environment and their relationship(s) to military system operations in command, control, communication and intelligence (C<sup>3</sup>I). In recent years the need for improved understanding has turned from the definition of a quiescent laminar ionospheric model to an approach that recognizes that the ionosphere is more irregular than quiescent and that dynamic processes present significant challenges to systems-oriented predictive capabilities. With this perspective, the Naval Research Laboratory, in collaboration with the Air Force Space Test Program, conducted an "in situ" ionospheric irregularities investigation using pulsed-plasma-probe (P<sup>3</sup>) instrumentation on the polar-orbiting STP/S3-4 satellite. The investigation was part of a broader NRL effort in ionospheric research including rocket-borne experiments and complementary theoretical activities supported by the Defense Nuclear Agency and the Office of Naval Research.

The P<sup>3</sup> is a specialized Langmuir probe using a pulse-modulated procedure for simultaneously measuring the ambient electron density  $N_e$ , temperature  $T_e$ , density fluctuation power spectra  $\delta N_e^2 P(k)$ , and mean ion mass  $\langle m_i \rangle$  under steady as well as highly irregular ionospheric plasma conditions<sup>1-3</sup>.

The measurements of  $N_e$  and  $T_e$  provide the basic information on the laminar condition of the ionosphere, allowing for the determination of ultimate ionospheric response to varying conditions (solar, magnetospheric, and geophysical in origin), and the detection of potential triggering mechanisms believed responsible for the generation of ionospheric irregularities (e.g., steep gradients in  $N_e$ ). While  $N_e$  and  $T_e$  help to identify zero-order conditions, the measurements of  $\delta N_e^2 P(k)$  were conducted in an effort to provide important test information for signal channel models as well as candidate instability mechanisms which might be activated in the ionospheric plasma. The simultaneous high-resolution measurements of mean-ion-mass  $\langle m_i \rangle$  represented an exploratory aspect of the program in probing the ionospheric domains for evidence of coupling between electron density fluctuation power spectra and irregularities in ion composition.

Manuscript submitted October 21, 1981.

The S3-4 satellite was launched in March 1978 into a sun-synchronous (2230 LT nightside equatorial crossing) polar-orbit at lower F-region altitudes and operated successfully until planned termination in September 1978. The orbit (see Table 1 for detailed characteristics) made possible a global study of  $N_e$ ,  $T_e$  and  $P_n(k)$ , an information set that will help catalogue similarities and differences between polar and equatorial irregularities and ultimately sort out first and second-order cause-effect relationships operating among plasma instabilities, ionospheric irregularities, and associated effects on  $C^3I$  systems in the HF-EHF electromagnetic wave propagation domain.

Figure 1 presents a phenomenological perspective of various geoplasma domains covered in the S3-4 investigation. The schematic presentation is in the noon-midnight meridian, with the midnight equator at the very left of the Figure, the north polar cap in the center, and the noontime equator to the right. The ionospheric plasma "biteouts" illustrated at nighttime equatorial latitudes represent one of the most dramatic features of ionospheric structure studied in the S3-4 effort. These "biteouts" are naturally occurring ionospheric holes which can be three decades deep in depletion and can have widths ranging from fractions of a kilometer to tens of kilometers<sup>4-7</sup>. There can be major changes in ion chemistry which take place across the boundaries of the holes...changes which now appear to be trendable and strongly coupled to the mechanism(s) which generate the holes themselves<sup>8,9</sup> and cascade the irregularity distributions from tens of kilometers to fractions of a meter<sup>10,11</sup>. These irregularities, generally identified with the disturbed ionospheric state called equatorial spread-F, are responsible for nighttime equatorial scintillations known to seriously limit the reliability of communication satellites. Studies have shown that scintillations near 250 MHz can be very intense (e.g., Ref. 12), exceeding 25 db peak-to-peak, fading quite regularly into the system noise. Existing data show that UHF satellite systems can have 50% outages between 1800 and 2400 hours local time in equatorial regions, and the phenomenon is known to impair signal quality up through frequencies in the gigahertz domain (e.g., Ref. 13 and associated bibliography).

Outside the nighttime equatorial domain the regions of primary interest in the S3-4 study of F-region irregularities involve the main trough, auroral oval, and the ionospheric domains encompassing the ring current, polar wind and the cusp. The mid-latitude and dayside equatorial F-regions are generally very regular in structure and consequently of less interest.

Table 1 — S3-4 Orbital Characteristics

Inclination .....	96.4°
Altitude .....	165 (+ 5) km x 250 (+20/-13) km
Argument of Perigee.....	126.4° (53.4°N dayside)
Average Orbital Velocity.....	7.53 km/sec
Operational Period (P <sup>3</sup> Data)...	30 Mar - 10 Sep 1978

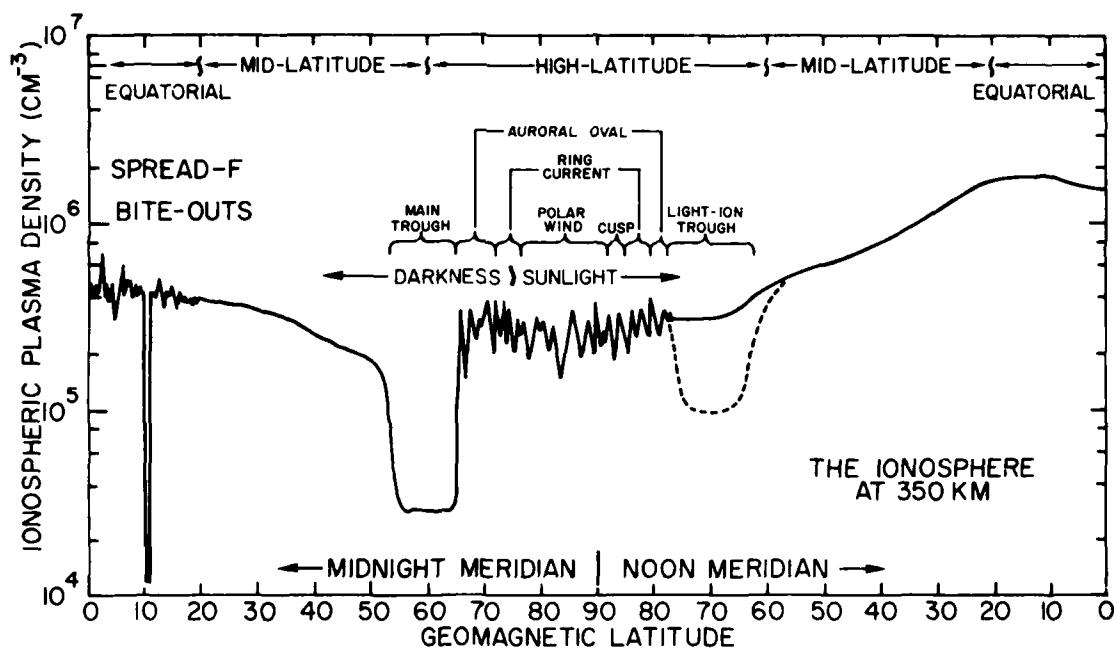


Fig. 1 — Phenomenological perspective of various geoplasma domains in the S3-4 investigation

Within the framework of the relatively simple picture in Figure 1, the improved plasma diagnostic capabilities on the S3-4 satellite and associated analysis efforts will attempt to assemble a relatively comprehensive catalogue of polar and equatorial irregularities along with an improved understanding of their cause-effect relationships. Indeed, some initial results have already been published<sup>7,14-16</sup>. In the subsequent sections, the experimental technique will be described, associated data sets outlined, and a catalogue of S3-4 ionospheric plasma observations will be presented for the entire mission lifetime. The catalogue is intended as a compendium of preliminary results and as a major reference for more detailed studies and collaborative investigations.

## 2. TECHNICAL OVERVIEW

### 2.1 Total Payload Complement

The S3-4 payload comprised five independent experiments intended to observe and/or measure the sun glint/glare regions of the Earth, vacuum ultraviolet airglow and associated auroral morphology, atmospheric density distributions at orbital altitudes, cosmic ray background distributions, and ionospheric F-region irregularity structures. The instruments, associated experimenter institutions, and related measurement objectives are listed in Table 2. Additional details on instrumentation and payload configuration are compiled in LMSC/D573879 Report (Lockheed Missile and Space Corporation, Sunnyvale, CA) Revision D, dated 27 February 1978, and entitled "S77-2 Experiment: Flight Requirements and Operations Plan".

### 2.2 Probe Experiment and Relationship of Raw-Data to Ionospheric Parameters

The NRL-747 experiment employed the pulsed-plasma-probe ( $P^3$ ) technique for direct high-resolution measurements of ionospheric F-region parameters. The instrument is a Langmuir-type probe using a special electronic procedure<sup>1-3</sup> for generating the classical Langmuir current-voltage characteristic<sup>17</sup> illustrated in Figure 2.

The current drawn by the probe from the plasma is a function of the probe size and geometry, the probe voltages, and the plasma densities, particle distribution functions, and collision frequencies. Consequently, a current-voltage characteristic of a probe imbedded within a plasma is rich with information about that plasma.

Table 2 — S3-4 Experiment Complement

EXPERIMENT DESIGNATION	MEASUREMENT OBJECTIVES	EXPERIMENTER INSTITUTION
SRE/TRE (Space Resolved Experiment/ Time Resolved Experiment)	Sun glint/glare regions of the Earth; natural and man-made optical events of varying intensities and durations	Sandia Laboratories
CRL 246/VUV (Vacuum Ultraviolet)	Vacuum ultraviolet airglow and associated global morphology	Air Force Geophysics Laboratory
CRL 247/PFA (Particle Flux Accumulator), CCC (Cold Cathode Gauge, and ROCA (Rotating Calibration Accelerometer)	Atmospheric neutral densities, spatial/temporal variations, and associated aerodynamic drag	Air Force Geophysics Laboratory
NRL 747/P <sup>3</sup> (Pulsed Plasma Probe)	Ionospheric plasma density, temperature, and associated irregularity distributions	Naval Research Laboratory
ONR 305/Cosmic Rays	Cosmic ray survey and possible relationship to magnetospheric processes	University of Washington

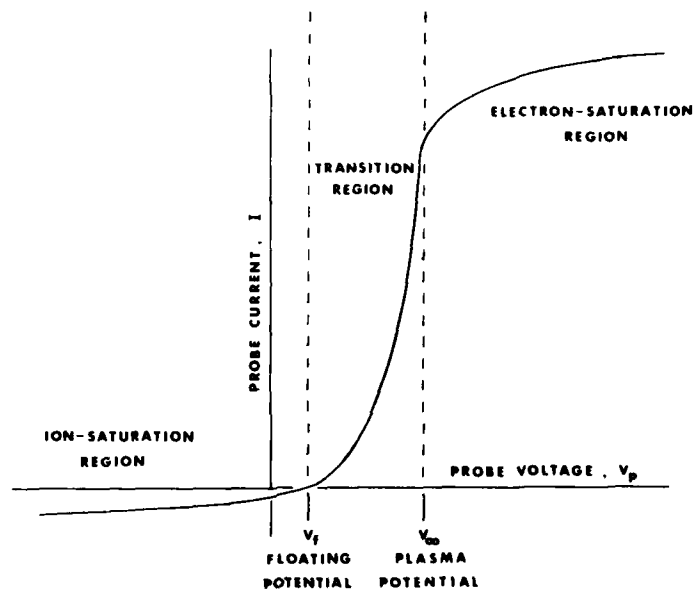


Fig. 2 — Classical Langmuir current-voltage characteristic for a cylindrical probe

In the simplest form applicable to the S3-4 experiment the current drawn by a cylindrical probe in the three regimes depicted in Figure 2 can be represented as

$$I = N_e A_p e \sqrt{2e/M_e \pi^2} (V_p - V_\infty)^{1/2} \equiv I_e(\text{sat}) \quad (1)$$

for electron saturation currents at probe potentials  $V_p$  substantially greater than the plasma potential  $V_\infty$ ; as  $P$

$$I = N_e A_p e \sqrt{kT_e/2\pi M_e} \exp [e(V_p - V_\infty)/kT_e] \equiv I_e(\text{trans}) \quad (2)$$

in the transition (or retarding-field) region when ion currents can be ignored or accounted for in the analysis procedure; and as

$$I = N_e A_p e \sqrt{kT_i/2\pi M_i} \left( \frac{2 \left( |e(V_p - V_\infty)| + \frac{M_i u^2}{2kT_i} \right)^{1/2}}{\sqrt{\pi} \left( \frac{kT_i}{kT_i} + \frac{M_i u^2}{2kT_i} \right)} \right) \equiv I_i(\text{sat}) \quad (3)$$

for  $M_i u^2/2 \sim |e(V_p - V_\infty)|$  with the probe axis perpendicular to the satellite velocity  $u$ , and for cases in which photo-emissive currents can be ignored <sup>17,19</sup>.

In equations (1)-(3) the quantities as yet unidentified are

$N_e$ ... electron density

$A_p$ ... probe area

$T_e, T_i$ ... electron (ion) temperature

$M_e, M_i$ ... electron (ion) mass

$e$ ... unit electron charge

$k$ ... Boltzmann constant

In general, the regions of probe current collection are analyzed independently with  $I_e(\text{sat})$ ,  $I_e(\text{trans})$ , and  $I_i(\text{sat})$  providing direct measurements of electron density  $N_e$ , temperature  $T_e$ , and ion mass  $M_i$ , respectively. Analysis procedures are relatively straightforward for conventional Langmuir probes in quiescent, homogeneous plasma environments. However, in highly irregular plasma environments (the primary focus in the S3-4 experiment) special procedures, both experimental and analytical, must be employed in order to make valid applications of equations (1)-(3). The  $P^3$  technique has been designed for these purposes.

### 2.3 Features of the $P^3$ Technique

The  $P^3$  technique uses a pulsed-voltage procedure for generating the raw current-voltage characteristic<sup>1-3</sup>. The result is improved reliability and expanded versatility in Langmuir probe measurement. As a diagnostic tool, the  $P^3$  technique reduces commonly found distortions in derived electron densities and energy distribution functions. A unique feature of the technique is its ability to measure simultaneously the electron temperature, density, and the density fluctuation power spectrum.

Fig. 3 shows two types of voltage waveforms that can be applied to the probe. Fig. 3(A) depicts a linear sawtooth sweep voltage which represents a conventional approach to Langmuir probe operation wherein some form of continuous voltage sweep is applied between voltage limits  $V_-$  and  $V_+$ . Fig. 3(B) shows the pulse-modulated sweep which has been utilized with  $P^3$ . The voltage pulses which follow the sawtooth envelope generate the probe's current-voltage characteristic. During the interpulse period, at constant voltage  $V_B$ , the collected probe current  $I_B$  (proportional to  $N$  in first order when  $I_B = I(\text{sat})$ ) provides a direct measure of variations in the probe-plasma system. The pulse duty-cycle is short so that the probe rests at its baseline potential  $V_B$  for a period much longer than the pulse width.

The pulsing procedure will maintain the probe's surface condition and associated voltage drop at a more nearly constant level than when using a continuous, slowly-varying sweep voltage. In the presence of highly-irregular plasma conditions the resulting current-voltage characteristic can then be unfolded from the plasma density fluctuations ( $\delta N \propto \delta I_B$ ) so that the electron temperature and density can be determined from the transition- and electron-saturation domains, respectively (see Refs. 20 and 21).

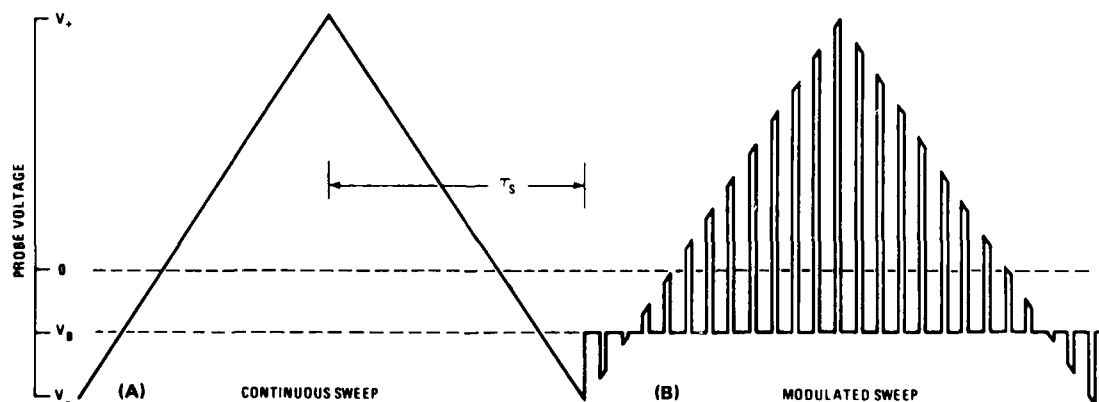


Fig. 3 — Two voltage-sweep modes for generating Langmuir-probe current-voltage characteristics. (A) Conventional approach, (B) pulse-modulated procedure utilized in the  $P^3$  procedure.



## 2.4 Probe Configuration, Data Outputs, Commands

A pair of pulsed plasma probes was utilized in the mission of S3-4. One probe (designated the E-probe) was maintained with  $V_B = V_{\infty}$ , so that  $I_B$ -current collection was in the electron saturation region,

$$I_B(\text{E-probe}) = I_B^e = N_e. \quad (4)$$

The second probe (the I-probe) was maintained with  $V_B = V_f = V_{\infty}$  so that  $I_B$ -current collection was in the ion saturation region, that is

$$I_B(\text{I-probe}) = I_B^i. \quad (5)$$

The probes themselves were of tungsten rod .030" in diameter and 9" long, extended on booms approximately 17" in length. There were eight command modes of operation (shown in Table 3) designed to optimize the experiment. (The command modes are not to be confused with previous discussions of continuous-sweep and pulsed-sweep modes of operation.)

Data from each probe was accumulated at two rates: Formats A and C at 100 and 800 sps, respectively. Primary tasking involved Format A operating for one complete orbit at a time followed by a required three orbits for data downlinking. In this operational mode full-orbit data was accumulated at separations of approximately  $90^\circ$  in longitudinal crossings of the equator. Format A data provided in-track measurements of relative density profiles, irregularity scale size distributions, gradient scale lengths, estimates of ion mass variations and electron density fluctuation power spectra.

Because of the higher rate and limited telemetry subsystem capability, Format C was operated only over specified domains with primary interest focused on the nighttime geomagnetic equator ( $\pm 20^\circ$ ) and the polar caps ( $\pm 40^\circ$ ). To the list of Format A measurements, Format C added absolute electron density, thermal electron energy distributions, vehicle potential, and high frequency capabilities in power spectral analyses. Table 4 summarizes measurement capabilities in both formats.

During July and August 1978, the S3-4 experiment underwent special tasking to provide high-rate Format C data in support of an equatorial spread-F rocket and radar investigation in the Kwajalein (Marshall Island) sector. Orbits involved in that effort are detailed in Table 5 while Table 6 (see pp. 17-32) presents an entire listing of p3/S3-4 orbital coverage.

Table 3 — NRL-747 Command Modes

Note: Mode A was a simple non-swept fixed-bias mode designed for low data rate acquisition. Modes B and C operated one of the two probes with a fixed-bias potential while the second probe was swept in the pulsed-mode. Modes D through G were commandable adjustments to modes B and C which controlled the sweep center voltage relative to the spacecraft potential.

Mode A	Probe E at positive fixed voltage Probe I at negative fixed voltage
Mode B	Probe I at fixed negative voltage Probe E pulsed from positive fixed baseline voltage
Mode C	Probe I pulsed from negative fixed baseline voltage Probe C at fixed positive
Mode D	Mode B with positive sweep center offset
Mode E	Mode C with positive sweep center offset
Mode F	Mode B with negative sweep center offset
Mode G	Mode C with negative sweep center offset
Mode H	Calibrate

Table 4 -- Data Formats and Primary Measurement Capabilities

MEASUREMENT	FORMAT	RANGE	RESOLUTION	SAMPLE RATE
Electron Density $N_e$	A	$\sim 10^2 - 10^7 \text{ cm}^{-3}$ (Relative)	10 msec $\sim 80$ meters	100 sps
	C	$\sim 10^4 - 10^7 \text{ cm}^{-3}$ (Relative $N_e$ )	1.25 msec $\sim 20$ meters	400-800 sps (relative $N_e$ )
		$\sim 10^2 - 10^7 \text{ cm}^{-3}$ (Absolute $N_e$ )	300 msec $\sim 2.4$ km	$\sim 3$ sps (absolute $N_e$ )
Electron Temperature $T_e$	C	$\sim 200 - 30,000^\circ \text{K}$	300 ms $\sim 2.4$ km	$\sim 3$ sps
Electron Density Irregularities $\delta N_e$	A	$\sim 10^2 - 10^7 \text{ cm}^{-3}$	$\sim 0.4\% - 100\%$ $\sim 80$ meters	100 sps
	C	$\sim 10^2 - 10^7 \text{ cm}^{-3}$	$\sim 0.4 - 100\%$ $\sim 20$ meters	800 sps
Density Fluctuation Power Spectra $P_N(k)$	A	dc - 50 Hz	-	100 sps
	C	dc - 400Hz	-	800 sps

Table 5 — Special S3-4 Format C Tasking During Nighttime  
Kwajalein Sector Equatorial Investigation

<u>REV</u>	<u>DATE</u>	<u>LONG(<sup>o</sup>E) *</u>	<u>REV</u>	<u>DATE</u>	<u>LONG(<sup>o</sup>E) *</u>
2121	25 July 78	195	2236	01 Aug 78	164
2122	25 July 78	174	2268	03 Aug 78	176
2123	25 July 78	150	2317	06 Aug 78	170
2137	26 July 78	201	2332	07 Aug 78	173
2139	26 July 78	154	2348	08 Aug 78	200
2154	27 July 78	183	2365	09 Aug 78	185
2170	28 July 78	188	2366	09 Aug 78	161
2186	29 July 78	194	2381	10 Aug 78	189
2187	29 July 78	172	2397	11 Aug 78	194
2202	30 July 78	199			
2219	31 July 78	181			

\* These are the longitudes of nighttime equatorial crossings

### 3. DATA PRESENTATION

Initial reduction routines for bulk processing and plotting of P<sup>3</sup>/S3-4 data begin with an orbit-by-orbit plot of relative electron density as measured by ion- and electron-saturation currents,  $I_B^i$  and  $I_B^e$  respectively. A representative sample of this data collected on orbit 0244 is shown in Figure 4 where the abscissa coordinates are universal time (UT), local time (LT), altitude (ALT [km]), latitude (LAT), longitude (LONG)<sup>o</sup>E, magnetic latitude (MLAT), L-shell value (L), and solar zenith angle (SZA). The probes' magnetic aspect angle (BA) is also plotted in the figure. The last two entries at the bottom of the abscissa heading include the mode of experiment operation (MODE) and an alarm (A) which identifies strong irregularity regions in  $I_B^e$ ,  $I_B^i$ ,  $T_e$  and  $V_\infty$ .

The left hand edge in Figure 4 corresponds to the satellite's ascending node (south-to-north) in the nighttime hemisphere near the south magnetic pole (MLAT = -90<sup>o</sup>). With increasing time (UT) the satellite passed through the nighttime equator (UT ~ 1932:00), over the nighttime auroral oval (UT ~ 1952:00) and into the dayside ionosphere (UT > 1952:00) where vehicle solar cell voltage biases the entire vehicle such that both probes draw approximately equal ion saturation currents.

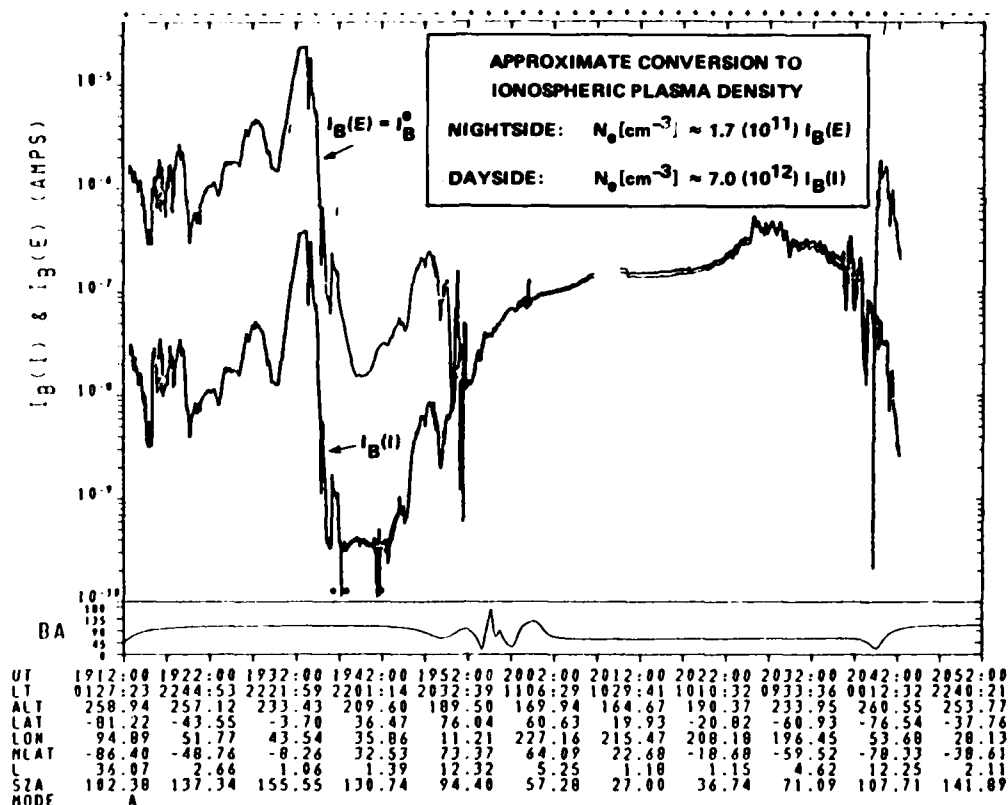


Fig. 4 — A representative sample of a full-orbit relative-electron-density profile (Format A) as measured by ion- and electron-saturation currents,  $I_B^e \equiv I_B(E)$  and  $I_B^i \equiv I_B(I)$  respectively. (See text for definition of abscissa coordinates.) Estimates for absolute values of electron densities can be achieved by the conversion  $N_e [\text{cm}^{-3}] \approx 1.7 (10^{11}) I_B(E) [\text{amps}]$  for the nightside ionosphere, and  $N_e [\text{cm}^{-3}] \approx 7.0 (10^{12}) I_B(I)$  for the dayside ionosphere.

The simultaneous measurements of electron- and ion-saturation currents,  $I_B^e = I_B(E)$  and  $I_B^i = I_B(I)$  respectively, provide confidence that the observed irregularities involve plasma variations and not just secondary effects (e.g., aspect sensitivities and variations in spacecraft potential). The header across the top of the figure identifies the experiment (NRL 747, the code designation for  $P^3$ ), the date on which the subject data was collected (03/31/78), the orbit number (REV 0244) and data rate (FORMAT A). The + and - symbols directly below the header identify power ON/OFF status of the spacecraft's solar cell subsystem (+/- indicates 28 volt bias ON/OFF).

A sample of Format C data collection is presented in Figure 5 for REV 0370, with all abscissa identifiers identical to those in the previous figure. For REV 0370, data acquisition

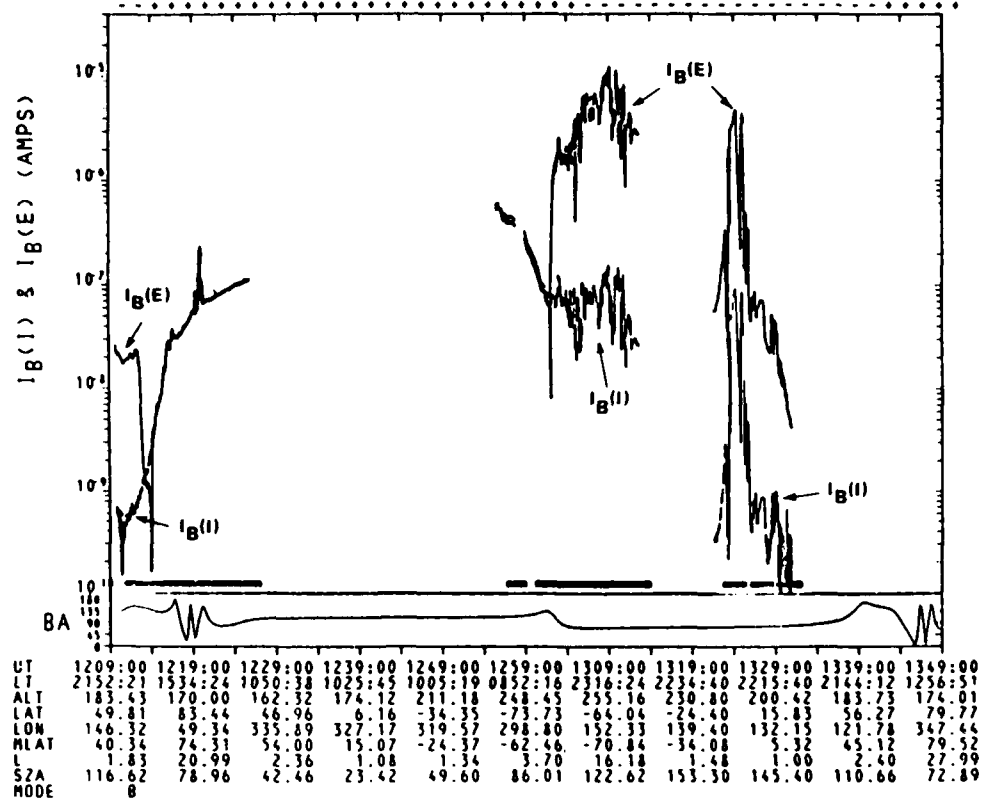


Fig. 5 — A representative sample of a partial-rev relative-electron-density profile (Format C) as measured by ion- and electron-saturation currents,  $I_B^I \equiv I_B(I)$  and  $I_B^E \equiv I_B(E)$  respectively.  $N_e [\text{cm}^{-3}] \approx 1.7(10^{11}) I_B^E$  [amps] for the nightside ionosphere, and  $N_e [\text{cm}^{-3}] \approx 7.0(10^{12}) I_B^I$  for the dayside ionosphere.

focused on the north polar cap ( $1209:00 < \text{UT} < 1229:00$ ), the south polar cap ( $1259:00 \sim \text{UT} \sim 1309:00$ ), and the nighttime equator ( $1321:00 \sim \text{UT} \sim 1331:00$ ), a sequence flowing from left-to-right in the figure.

While data sets like those shown in Figures 4 and 5 provide maps of large scale ionospheric features, they represent only the beginnings of S3-4 analysis procedures. To date these maps have provided a macroscopic synopsis of ionospheric structure<sup>16</sup> along with several more detailed studies of equatorial<sup>7,14</sup> and high-latitude irregularity distributions<sup>15</sup>. Primary investigative objectives focusing on the data compiled here are directed toward the relationships between the large scale features (kilometers to tens of kilometers) and much smaller scale irregularities (tens of meters and less) believed to result from multi-stepped

plasma processes. To this end, the fundamental data sets ( $I_B(E) = I_B^e$  and  $(I_B(E)/I_B(I))^2 = (I_B^e/I_B^i)^2$ ) are fast-Fourier-analyzed to determine their fluctuation power spectra and relationships to gradient scale lengths, geomagnetic domains, and electron energy distribution functions. In addition, more complete analyses are underway to provide quantitative characterizations of the various geoplasma boundaries and to uncover trends in ionospheric signatures of the auroral oval, ring current, polar cap and the poleward edge of the midlatitude trough (e.g., density profiles and irregularity distributions). A quantitative synoptic model is expected to evolve from past <sup>7,14-16</sup> and future efforts.

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Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets

DATE	REV. NO.	FORMAT	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
03/30/78	0221	A	188	x		
03/30/78	0230	C	355	x*		
03/31/78	0244	A	39	x		
04/01/78	0249	C	293	x		
04/01/78	0254	A	178	x		
04/01/78	0258	A	89	x		
04/01/78	0262	A	1	x		
04/02/78	0274	A	96	x		
04/02/78	0277	A	30	x		
04/03/78	0282	A	281	x		
04/03/78	0287	A	168	x		
04/03/78	0291	A	80	x		
04/03/78	0295	A	350	x		
04/03/78	0301	C	223	x		
04/04/78	0306	A	110	x		
04/04/78	0308	A	60	x		
04/04/78	0312	A	335	x		
04/05/78	0322	A	115	x		
04/05/78	0325	A	48	x		
04/06/78	0329	A	319	x		
04/06/78	0335	C	191	x		
04/06/78	0339	A	98	x		
04/06/78	0343	A	10	x		
04/07/78	0347	A	280	x		
04/07/78	0353	C	151	x		
04/07/78	0357	A	59	x		
04/07/78	0360	A	353	x		
04/08/78	0364	A	264	x		
04/08/78	0370	C	135	x		
04/08/78	0373	A	66	x		
04/08/78	0377	A	338	x		
04/09/78	0382	A	227	x		
04/09/78	0388	C	98	x		
04/09/78	0390	A	50	x		
04/09/78	0393	A	343		x	
04/10/78	0398	A	233	x		
04/10/78	0405	C	81	x		
04/11/78	0412	A	282	x		
04/12/78	0433	A	179		x	
04/12/78	0441	A			x	

\* I<sub>B</sub> plots not available in hard copy or microfiche.  
N<sub>e</sub> and T<sub>e</sub> are shown for comparison

Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

<u>DATE</u>	<u>REV. NO.</u>	<u>FORMAT</u>	APPROX. LONGITUDE OF NIGHTSIDE EQUATORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
04/13/78	0445	A	272		x	
04/13/78	0453	A	97		x	
04/14/78	0464	A	213		x	
04/14/78	0474	C	355		x	
04/15/78	0477	A	285		x	
04/15/78	0482	A	175		x	
04/15/78	0491	C	338		x	
04/16/78	0495	A	80		x	
04/16/78	0498	A	180		x	
04/16/78	0502	A	92		x	
04/16/78	0508	C	323		x	
04/17/78	0522	A	10		x	
04/17/78	0523	A	349		x	
04/17/78	0524	A	327		x	
04/18/78	0525	A	306		x	
04/18/78	0526	A	285		x	
04/18/78	0527	A	263		x	
04/18/78	0528	A	235		x	
04/18/78	0529	A	221		x	
04/18/78	0530	A	191	x		
04/18/78	0531	A	169	x		
04/18/78	0533	A	124	x		
04/18/78	0534	A	103	x		
04/18/78	0536	A	59		x	
04/18/78	0537	A	37		x	
04/18/78	0538	A	16		x	
04/18/78	0539	A	355		x	
04/18/78	0540	A	333		x	
04/19/78	0541	A	311		x	
04/19/78	0542	A	290		x	
04/19/78	0543	A	265		x	
04/19/78	0545	A	219		x	
04/19/78	0547	A	182	x		
04/19/78	0548	A	153	x		
04/19/78	0549	A	138	x		
04/19/78	0550	A	112	x		
04/19/78	0552	A	65	x		
04/19/78	0553	A	43		x	
04/19/78	0554	A	20		x	
04/19/78	0555	A	360		x	

Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

<u>DATE</u>	<u>REV. NO.</u>	<u>FORMAT</u>	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
04/19/78	0556	A	337	x		
04/20/78	0557	A	317	x		
04/20/78	0558	A	295	x		
04/20/78	0559	A	274	x		
04/20/78	0561	A	233	x		
04/20/78	0562	A	210	x		
04/20/78	0564	A	163	x		
04/21/78	0582	A	121		x	
04/21/78	0583	A	99		x	
04/21/78	0584	A	76		x	
04/21/78	0585	A	55		x	
04/21/78	0586	A	33		x	
04/21/78	0587	A	11		x	
04/22/78	0591	C	284		x	
04/22/78	0596	A	173		x	
04/22/78	0601	A	62		x	
04/22/78	0604	A	356		x	
04/23/78	0608	C	268		x	
04/23/78	0612	A	179		x	
04/23/78	0616	A	90		x	
04/23/78	0620	A	2		x	
04/24/78	0625	C	253		x	
04/24/78	0631	A	118		x	
04/24/78	0634	A	51		x	
04/25/78	0638	A	322		x	
04/25/78	0643	C	211		x	
04/25/78	0648	A	101		x	
04/25/78	0652	A	12		x	
04/26/78	0656	A	284		x	
04/26/78	0666	A	61		x	
04/26/78	0669	A	355		x	
04/27/78	0673	A	266		x	
04/27/78	0677	C	200		x	
04/27/78	0680	A	111		x	
04/27/78	0683	A	44		x	
04/27/78	0686	A	338		x	
04/28/78	0691	A	227		x	
04/28/78	0694	C	163		x	
04/28/78	0697	A	94		x	
04/28/78	0701	A	5		x	

Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

<u>DATE</u>	<u>REV. NO.</u>	<u>FORMAT</u>	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
04/29/78	0706	A	276		x	
04/29/78	0712	C	124		x	
04/29/78	0715	A	55		x	
04/30/78	0721	A	282		x	
04/30/78	0724	A	215		x	
04/30/78	0729	C	106		x	
04/30/78	0732	A	38		x	
04/30/78	0735	A	331		x	
05/01/78	0740	A	220		x	
05/01/78	0746	C	90		x	
05/01/78	0748	A	43		x	
05/02/78	0752	A	314		x	
05/02/78	0759	A	181		x	
05/02/78	0763	C	73		x	
05/02/78	0765	A	26		x	
05/03/78	0769	A	298		x	
05/03/78	0774	A	187		x	
05/03/78	0781	C	33		x	
05/04/78	0784	A	325		x	
05/04/78	0788	A	236		x	
05/04/78	0794	A	103		x	
05/04/78	0798	C	1		x	
05/05/78	0801	A	309		x	
05/05/78	0807	A	175		x	
05/05/78	0811	A	87		x	
05/08/78	0852	A	257		x	
05/09/78	0872	A	174		x	
05/13/78	0932	A	305		x	
05/16/78	0993	A	32		x	
05/17/78	1000	A	215		x	
05/17/78	1005	A	105		x	
05/17/78	1009	A	16		x	
05/18/78	1018	A	176		x	
05/18/78	1022	A	87		x	
05/18/78	1025	A	20		x	
05/19/78	1030	C	268		x	
05/19/78	1034	A	181		x	
05/19/78	1038	A	92		x	
05/19/78	1041	A	26		x	
05/20/78	1047	C	252	x		

Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

DATE	REV. NO.	FORMAT	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
05/20/78	1053	A	120			
05/20/78	1055	A	53	x		
05/21/78	1060	A	325		x	
05/21/78	1065	C	214		x	
05/21/78	1070	A	103		x	
05/21/78	1073	A	37	x		
05/22/78	1077	A	308	x		
05/22/78	1082	C	197	x		
05/23/78	1099	C	200	x		
05/24/78	1110	A	206	x		
05/24/78	1121	A	52	x		
05/24/78	1124	A	345	x		
05/25/78	1129	A	234	x		
05/25/78	1136	A	79	x		
05/25/78	1139	A	12	x		
05/26/78	1151	C	107	x		
05/26/78	1154	A	40			
05/27/78	1168	C	90		x	
05/29/78	1203	C	33	x		
05/31/78	1229	A	177	x		
06/03/78	1271	C	324		x	
06/03/78	1276	A	215	x		
06/03/78	1281	A	104	x		
06/03/78	1287	A	327	x		
06/04/78	1290	A	268	x		
06/04/78	1291	A	238	x		
06/04/78	1294	A	172	x		
06/04/78	1295	A	150	x		
06/04/78	1302	A	354	x		
06/04/78	1303	A	332	x		
06/05/78	1304	A	310	x		
06/05/78	1305	A	288	x		
06/05/78	1306	A	269	x		
06/05/78	1307	A	243	x		
06/05/78	1308	A	221	x		
06/05/78	1309	A	199	x		
06/05/78	1310	A	177	x		
06/05/78	1311	A	159	x		
06/05/78	1312	A	132	x		
06/05/78	1313	A	111	x		

Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

<u>DATE</u>	<u>REV. NO.</u>	<u>FORMAT</u>	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
06/05/78	1314	A	88	x		
06/05/78	1315	A	66	x		
06/05/78	1316	A	44	x		
06/05/78	1317	A	29	x		
06/06/78	1326	A	182	x		
06/06/78	1327	A	160	x		
06/06/78	1334	A	9	x		
06/07/78	1337	C	300	x		
06/07/78	1350	A	13	x		
06/08/78	1359	A	174	x		
06/08/78	1363	A	85	x		
06/08/78	1366	A	19	x		
06/09/78	1371	C	267	x		
06/09/78	1375	A	180	x		
06/09/78	1379	A	91	x		
06/09/78	1383	A	362	x		
06/10/78	1394	A	118		x	
06/10/78	1397	A	51	x		
06/11/78	1401	A	323	x		
06/11/78	1410	A	123	x		
06/11/78	1414	A	34	x		
06/12/78	1418	A	305	x		
06/12/78	1423	C	195	x		
06/12/78	1428	A	80	x		
06/12/78	1431	A	17	x		
06/13/78	1435	A	289	x		
06/13/78	1440	C	178	x		
06/13/78	1444	A	89	x		
06/13/78	1447	A	22	x		
06/14/78	1457	C	161	x		
06/14/78	1461	A	72	x		
06/15/78	1470	A	233	x		
06/15/78	1475	C	122	x		
06/22/78	1589	C	114		x	
06/22/78	1593	A	25	x		
06/23/78	1598	A	275	x		
06/23/78	1602	A	185	x		
06/23/78	1607	C	74	x		
06/24/78	1614	A	279	x		
06/24/78	1618	A	190	x		

Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

DATE	REV. NO.	FORMAT	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
06/24/78	1624	C	57	x*		
06/24/78	1626	A	13	x		
06/25/78	1630	A	284	x		
06/25/78	1635	A	170	x		
06/25/78	1638	A	107	x		
06/27/78	1669	A	139	x		
06/27/78	1673	C	51	x		
06/27/78	1676	A	344	x		
06/28/78	1681	A	234	x		
06/28/78	1686	A	123	x		
06/28/78	1689	A	55	x		
06/28/78	1691	C	12	x		
06/29/78	1694	A	305	x		
06/29/78	1698	A	216	x		
06/29/78	1703	A	105	x		
06/29/78	1708	C	354	x		
06/30/78	1713	A	243	x		
06/30/78	1718	A	132	x		
06/30/78	1725	C	337	x		
07/01/78	1732	A	183	x		
07/01/78	1737	A	93	x		
07/01/78	1740	A	4	x		
07/02/78	1742	A	320	x		
07/02/78	1743	A	298	x		
07/02/78	1744	A	274	x		
07/02/78	1745	A	253	x		
07/02/78	1746	A	232	x		
07/02/78	1747	A	209		x	
07/02/78	1748	A	187	x		
07/02/78	1749	A	187	x		
07/02/78	1751	A	121	x		
07/02/78	1752	A	98	x		
07/02/78	1753	A	76	x		
07/02/78	1754	A	53	x		
07/02/78	1755	A	32	x		
07/02/78	1756	A	9	x		
07/02/78	1757	A	347	x		
07/03/78	1758	A	325	x		
07/03/78	1759	A	303	x		
07/03/78	1760	A	279	x		

\* I<sub>B</sub> plots not available in hard copy or microfiche

N<sub>e</sub> and T<sub>e</sub> are shown for comparison.



Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

<u>DATE</u>	<u>REV. NO.</u>	<u>FORMAT</u>	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
07/03/78	1761	A	258	x		
07/03/78	1763	A	214	x		
07/03/78	1764	A	192	x		
07/03/78	1765	A	170	x		
07/03/78	1766	A	148	x		
07/03/78	1767	A	125	x		
07/03/78	1768	A	103	x		
07/03/78	1769	A	83	x		
07/03/78	1770	A	59	x		
07/03/78	1771	A	37	x		
07/03/78	1772	A	15	x		
07/03/78	1773	A	353	x		
07/04/78	1774	A	331	x		
07/04/78	1775	A	309	x		
07/04/78	1776	A	286	x		
07/04/78	1777	A	264	x		
07/04/78	1779	A	218	x		
07/04/78	1781	A	176	x		
07/04/78	1782	A	153	x		
07/04/78	1783	A	132	x		
07/04/78	1784	A	109	x		
07/04/78	1785	A	87	x		
07/04/78	1786	A	65	x		
07/04/78	1787	A	42	x		
07/04/78	1788	A	20	x		
07/05/78	1791	A	310	x		
07/05/78	1797	A	180	x		
07/05/78	1801	A	92	x		
07/05/78	1804	A	25	x		
07/06/78	1808	C	293	x		
07/06/78	1813	A	186	x		
07/06/78	1817	A	98	x		
07/06/78	1821	A	8	x		
07/07/78	1830	A	169	x		
07/07/78	1834	A	80	x		
07/07/78	1837	A	14	x		
07/08/78	1841	A	285	x		
07/08/78	1848	A	130	x		
07/08/78	1851	A	63	x		
07/09/78	1864	A	135	x		

Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

DATE	REV. NO.	FORMAT	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
07/09/78	1867	A	68	x		
07/09/78	1871	A	339	x		
07/10/78	1882	A	96	x		
07/10/78	1886	A	7	x		
07/11/78	1890	A	278	x		
07/12/78	1912	C	150	x		
07/12/78	1915	A	83	x		
07/12/78	1919	A	354	x		
07/13/78	1923	A	266	x		
07/13/78	1929	C				x
07/13/78	1932	A	66	x		
07/14/78	1948	A	72	x		
07/14/78	1951	A	5	x		
07/15/78	1955	A	276	x		
07/15/78	1959	A	188	x		
07/15/78	1964	C	78	x*		
07/16/78	1971	A	281	x		
07/16/78	1981	C	61	x		
07/16/78	1983	A	15	x		
07/17/78	1987	A	286	x		
07/17/78	1995	A	109	x		
07/17/78	1998	C	43	x		
07/17/78	2001	A	336	x		
07/18/78	2006	A	226	x		
07/18/78	2011	A	114	x		
07/18/78	2015	C	26	x		
07/19/78	2018	A	319	x**		
07/19/78	2023	A	208	x		
07/19/78	2029	A	75	x		
07/19/78	2033	C	347	x		
07/20/78	2036	A	280	x		
07/20/78	2041	A	169	x		
07/21/78	2050	C	330	x		
07/21/78	2052	A	285	x		
07/21/78	2057	A	174	x		
07/21/78	2064	A	15	x		
07/21/78	2065	A	356	x		
07/21/78	2066	A	335	x		
07/22/78	2067	A	313	x		

\* I<sub>B</sub> plots not available in hard copy or microfiche.  
N<sub>e</sub> and T<sub>e</sub> are shown for comparison.

\*\* I<sub>B</sub> plots not available in hard copy or microfiche.  
(I<sub>B</sub>(E)/I<sub>B</sub>(I))<sup>2</sup> is shown for comparison.

Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

<u>DATE</u>	<u>REV. NO.</u>	<u>FORMAT</u>	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
07/22/78	2068	A	291	x		
07/22/78	2069	A	270	x		
07/22/78	2071	A	227	x		
07/22/78	2072	A	198	x		
07/22/78	2073	A	175	x		
07/22/78	2074	A	153	x		
07/23/78	2083	A	319		x	
07/23/78	2084	A	296	x		
07/23/78	2085	A	275	x		
07/23/78	2086	A	253	x		
07/23/78	2087	A	225	x		
07/23/78	2088	A	203	x		
07/23/78	2089	A	158	x		
07/23/78	2091	A	181	x		
07/23/78	2092	A	114	x		
07/23/78	2093	A	92	x		
07/23/78	2094	A	70	x		
07/23/78	2095	A	49	x		
07/23/78	2096	A	27	x		
07/23/78	2097	A	6	x		
07/23/78	2098	A	345	x		
07/23/78	2099	A	323	x		
07/24/78	2100	A	302	x		
07/24/78	2101	A	280	x		
07/24/78	2102	A	258	x		
07/24/78	2103	A	237	x		
07/24/78	2104	A	208	x		
07/24/78	2105	A	186	x		
07/24/78	2106	A	171	x		
07/24/78	2108	A	119	x		
07/24/78	2109	A	98	x		
07/24/78	2110	A	74	x		
07/24/78	2111	A	54	x		
07/24/78	2112	A	32	x		
07/24/78	2113	A	12	x		
07/25/78	2116	A	305	x		
07/25/78	2121	C	195	x		
07/25/78	2122	C	174	x		
07/25/78	2123	C	150	x		
07/25/78	2127	A	62	x		

Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

<u>DATE</u>	<u>REV. NO.</u>	<u>FORMAT</u>	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
07/25/78	2131	A	333	x		
07/26/78	2137	C	201	x		
07/26/78	2139	C	154	x		
07/26/78	2142	A	88	x		
07/26/78	2146	A	360	x		
07/27/78	2154	C	183	x		
07/27/78	2159	A	70	x		
07/27/78	2163	A	342	x		
07/28/78	2170	C	188	x		
07/28/78	2177	A	33	x		
07/29/78	2181	A	281	x		
07/29/78	2186	C	194	x		
07/29/78	2187	C	172	x		
07/29/78	2191	A	82	x		
07/29/78	2194	A	15	x		
07/30/78	2198	A	286	x		
07/30/78	2202	C	199	x		
07/30/78	2207	A	87	x		
07/30/78	2211	A	358	x		
07/31/78	2215	A	270	x		
07/31/78	2219	C	181	x		
07/31/78	2223	A	92	x		
07/31/78	2227	A	4	x		
08/01/78	2231	A	275	x		
08/01/78	2236	C				x
08/01/78	2239	A	97	x		
08/01/78	2242	A	30	x		
08/02/78	2246	A	301	x		
08/02/78	2254	C				x
08/02/78	2256	A	80	x		
08/02/78	2259	A	13	x		
08/03/78	2263	A	285	x		
08/03/78	2268	C	176	x		
08/03/78	2273	A	63	x		
08/03/78	2277	A	334	x		
08/04/78	2285	A	157	x		
08/04/78	2289	A	68	x		
08/04/78	2292	A	50		x	
08/05/78	2296	A	273	x		
08/05/78	2303	A	118	x		

Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

<u>DATE</u>	<u>REV. NO.</u>	<u>FORMAT</u>	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
08/05/78	2308	A	7	x		
08/06/78	2312	A	278	x		
08/06/78	2317	C	170	x		
08/06/78	2321	A	79	x		
08/06/78	2324	A	12	x		
08/07/78	2328	A	283	x		
08/07/78	2332	C				x
08/07/78	2338	A	61	x		
08/07/78	2342	A	332	x		
08/08/78	2348	C	200	x		
08/08/78	2353	A	88	x		
08/08/78	2356	A	22	x		
08/09/78	2360	A	293	x		
08/09/78	2365	C	185	x		
08/09/78	2366	C	161	x		
08/09/78	2370	A	72	x		
08/09/78	2374	A	244	x		
08/10/78	2379	A	233	x		
08/10/78	2381	C	189	x		
08/10/78	2386	A	77	x		
08/10/78	2389	A	10	x		
08/11/78	2393	A	281	x		
08/11/78	2397	C	194	x		
08/11/78	2405	A	16	x		
08/11/78	2406	A	353	x		
08/11/78	2407	A	353	x		
08/12/78	2408	A	331	x		
08/12/78	2409	A	309	x		
08/12/78	2410	A	287	x		
08/12/78	2411	A	265	x		
08/12/78	2413	A	222	x		
08/12/78	2414	A	153	x		
08/12/78	2416	A	110	x		
08/12/78	2417	A	110	x		
08/12/78	2419	A	88	x		
08/12/78	2420	A	65	x		
08/12/78	2421	A	43	x		
08/12/78	2422	A	21	x		
08/12/78	2423	A	359	x		
08/13/78	2425	A	315	x		

Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

<u>DATE</u>	<u>REV. NO.</u>	<u>FORMAT</u>	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
08/13/78	2426	A	270	x		
08/13/78	2427	A	248	x		
08/13/78	2428	A	228	x		
08/13/78	2430	A	178	x		
08/13/78	2431	A	157	x		
08/13/78	2432	A	136	x		
08/13/78	2433	A	113	x		
08/13/78	2434	A	93	x		
08/13/78	2435	A	93	x		
08/13/78	2436	A	70	x		
08/13/78	2437	A	28	x		
08/13/78	2438	A	26	x		
08/13/78	2439	A	4	x		
08/13/78	2440	A	341	x		
08/14/78	2441	A	320	x		
08/14/78	2442	A	296	x		
08/14/78	2443	A	275	x		
08/14/78	2444	A	232	x		
08/14/78	2449	A	118	x		
08/14/78	2451	A	97	x		
08/14/78	2452	A	76	x		
08/14/78	2453	A	31	x		
08/15/78	2458	C	281	x		
08/15/78	2461	A	213	x		
08/15/78	2466	A	102	x		
08/15/78	2470	A	14	x		
08/16/78	2475	A	264	x		
08/16/78	2479	A	174	x		
08/16/78	2483	A	84	x		
08/16/78	2487	A	256	x		
08/17/78	2492	C	248	x		
08/17/78	2495	A	178	x		
08/17/78	2499	A	90	x		
08/17/78	2502	A	23	x		
08/18/78	2506	A	294	x		
08/18/78	2509	C	230	x		
08/18/78	2518	A	29	x		
08/19/78	2527	C	192	x		
08/19/78	2532	A	78	x		
08/20/78	2539	A	283	x		

Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

DATE	REV. NO.	FORMAT	APPROX. LONGITUDE OF NIGHTSIDE EQUATORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
08/20/78	2544	C	175	x		
08/20/78	2548	A	83	x		
08/20/78	2552	A	354	x		
08/21/78	2556	A	266	x		
08/23/78	2590	A	233	x		
08/23/78	2598	A	54	x		
08/24/78	2602	A	325	x		
08/24/78	2616	A	14	x		
08/25/78	2620	A	285	x		
08/25/78	2625	A	181	x		
08/25/78	2630	C	66	x		
08/25/78	2632	A	25	x		
08/26/78	2641	A	183	x		
08/26/78	2647	C	53	x		
08/26/78	2650	A	349	x		
08/27/78	2655	A	230	x		
08/28/78	2668	A	303	x		
08/28/78	2672	A	213	x		
08/28/78	2682	C	355	x		
08/29/78	2686	A	262	x		
08/29/78	2690	A	173	x		
08/29/78	2694	A	85	x		
08/29/78	2699	C	338	x		
08/30/78	2706	A	179	x		
08/30/78	2711	A	68	x		
08/31/78	2717	C	322	x		
08/31/78	2720	A	228	x		
08/31/78	2725	A	118	x		
08/31/78	2730	A	5	x		
08/31/78	2731	A	343	x		
09/01/78	2732	A	320	x		
09/01/78	2733	A	298	x		
09/01/78	2734	A	282	x		
09/01/78	2735	A	254	x		
09/01/78	2736	A	231	x		
09/01/78	2737	A	209	x		
09/01/78	2738	A	194	x		
09/01/78	2739	A	165	x		
09/01/78	2740	A	143	x		
09/01/78	2742	A	99	x		

Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Continued)

<u>DATE</u>	<u>REV. NO.</u>	<u>FORMAT</u>	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
09/01/78	2743	A	77	x		
09/01/78	2744	A	54	x		
09/01/78	2745	A	32	x		
09/01/78	2747	A	348	x		
09/01/78	2748	A	325	x		
09/02/78	2749	A	304	x		
09/02/78	2750	A	286	x		
09/02/78	2751	A	266	x		
09/02/78	2752	A	244	x		
09/02/78	2753	A	222	x		
09/02/78	2754	A	192	x		
09/02/78	2755	A	170	x		
09/02/78	2756	A	148	x		
09/02/78	2757	A	126	x		
09/02/78	2758	A	103	x		
09/02/78	2759	A	82	x		
09/02/78	2760	A	59	x		
09/02/78	2761	A	38	x		
09/02/78	2762	A	15	x		
09/02/78	2764	A	331	x		
09/03/78	2765	A	309	x		
09/03/78	2766	A	287	x		
09/03/78	2767	A	264	x		
09/03/78	2768	A	242	x		
09/03/78	2770	A	219	x		
09/03/78	2771	A	198	x		
09/03/78	2772	A	176	x		
09/03/78	2773	A	131	x		
09/03/78	2774	A	108	x		
09/03/78	2775	A	87	x		
09/03/78	2776	A	64	x		
09/03/78	2777	A	42	x		
09/04/78	2793	A	48	x		
09/05/78	2804	A	164	x		
09/05/78	2808	A	80	x		
09/05/78	2811	A	9	x		



Table 6 — Complete Listing of P<sup>3</sup>/S3-4 Data Sets (Concluded)

<u>DATE</u>	<u>REV. NO.</u>	<u>FORMAT</u>	APPROX. LONGITUDE OF NIGHTSIDE EQUA- TORIAL CROSSING [Degrees East]	DATA STATUS		
				Complete	Noisy Tape, Partial REV	Not Currently Available
09/06/78	2816	A	263	x		
09/06/78	2820	A	170	x		
09/06/78	2825	A	59	x		
09/06/78	2829	A	230	x		
09/07/78	2839	A	109	x		
09/07/78	2841	A	64		x	
09/07/78	2842	A	47	x		
09/07/78	2845	A	335	x		
09/08/78	2851	C	206	x		
09/08/78	2856	A	91	x		
09/09/78	2860	A	2	x		
09/09/78	2864	A	274	x		
09/10/78	2883	A	216	x		

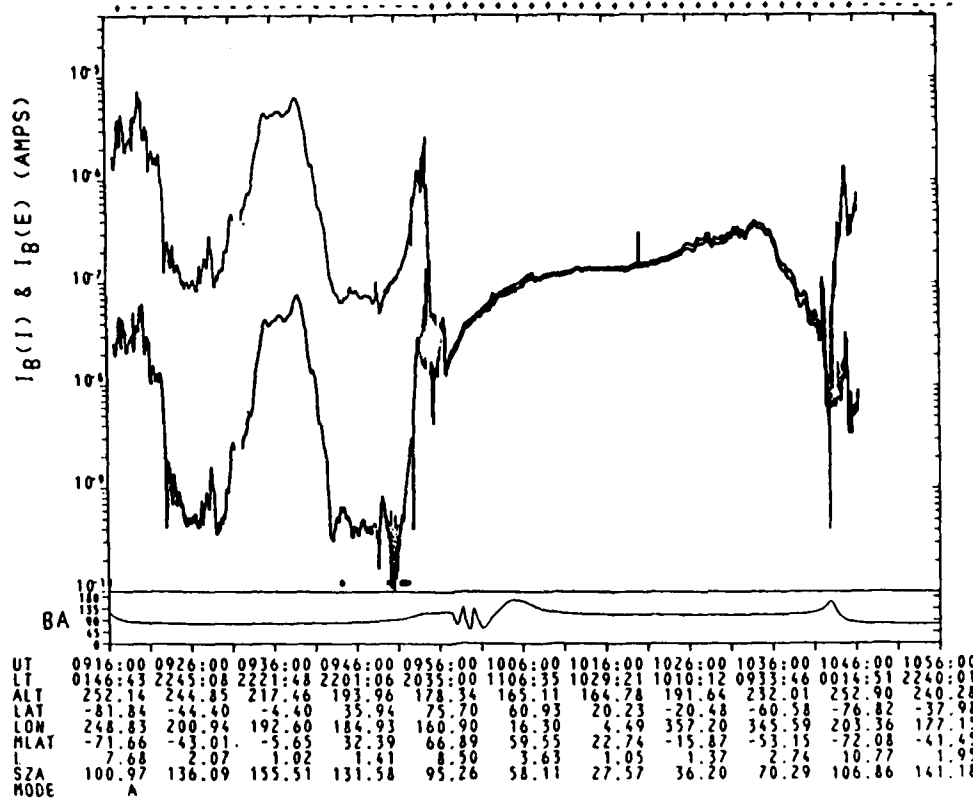
**ATLAS S3-4 RELATIVE ELECTRON DENSITY PROFILES**

NRL 747

03/30/78

REV 0221

FORMAT A

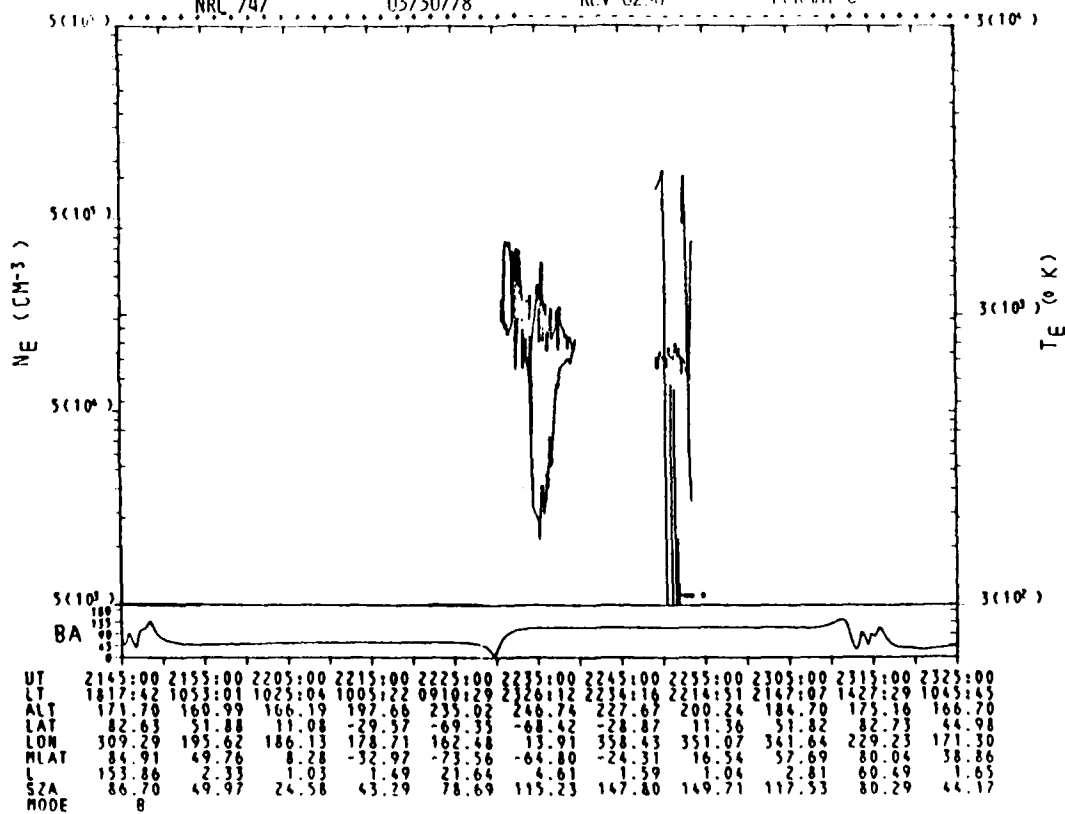


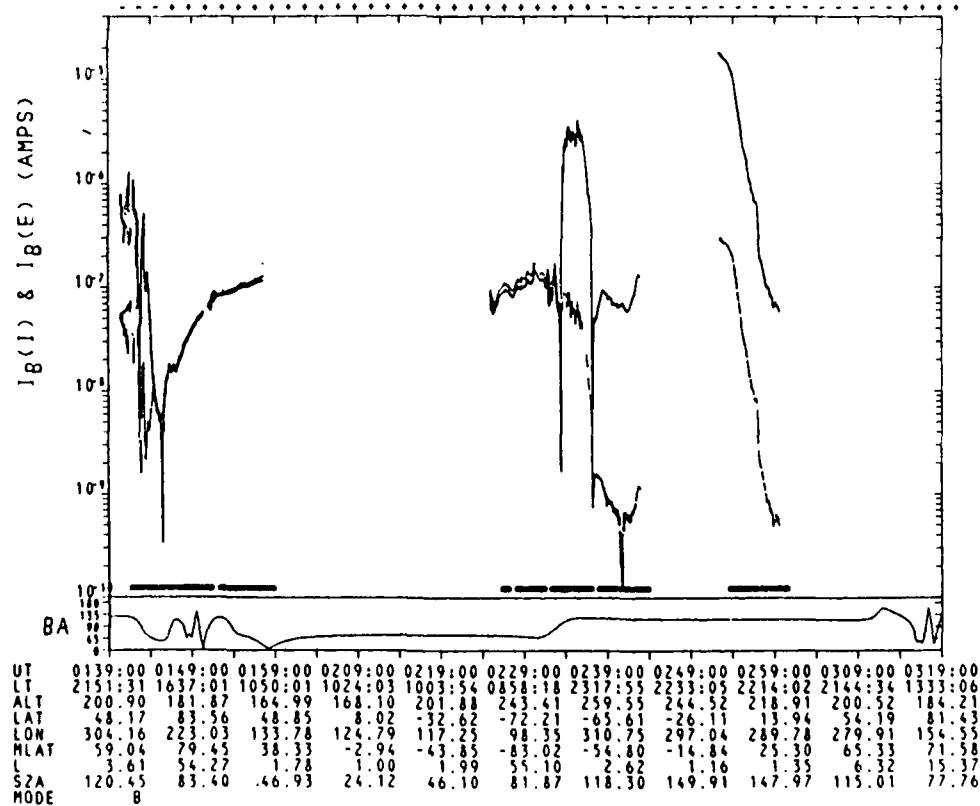
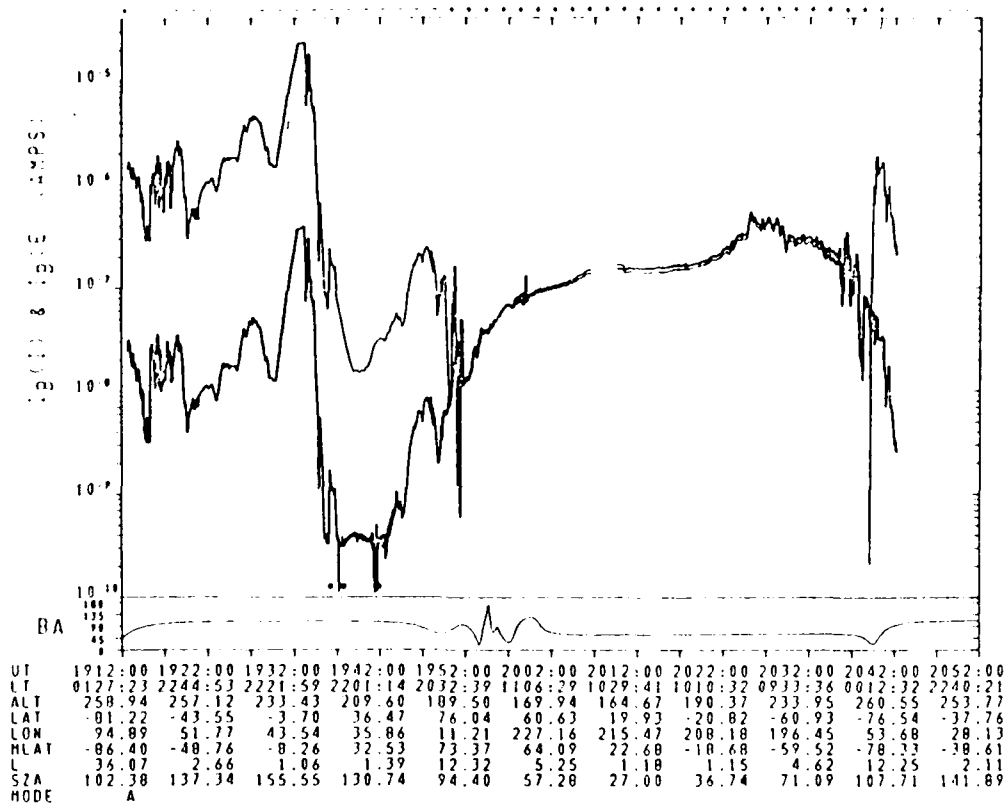
NRL 747

03/30/78

REV 0230

FORMAT C



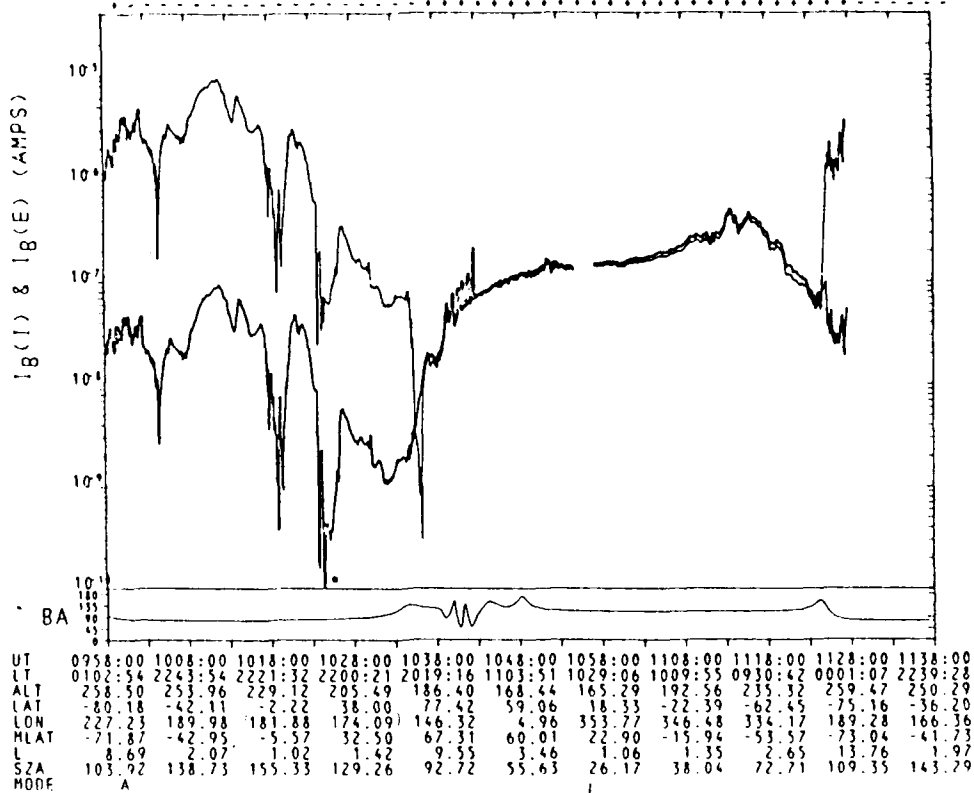


NRL 747

04/01/78

REV 0254

FORMAT A

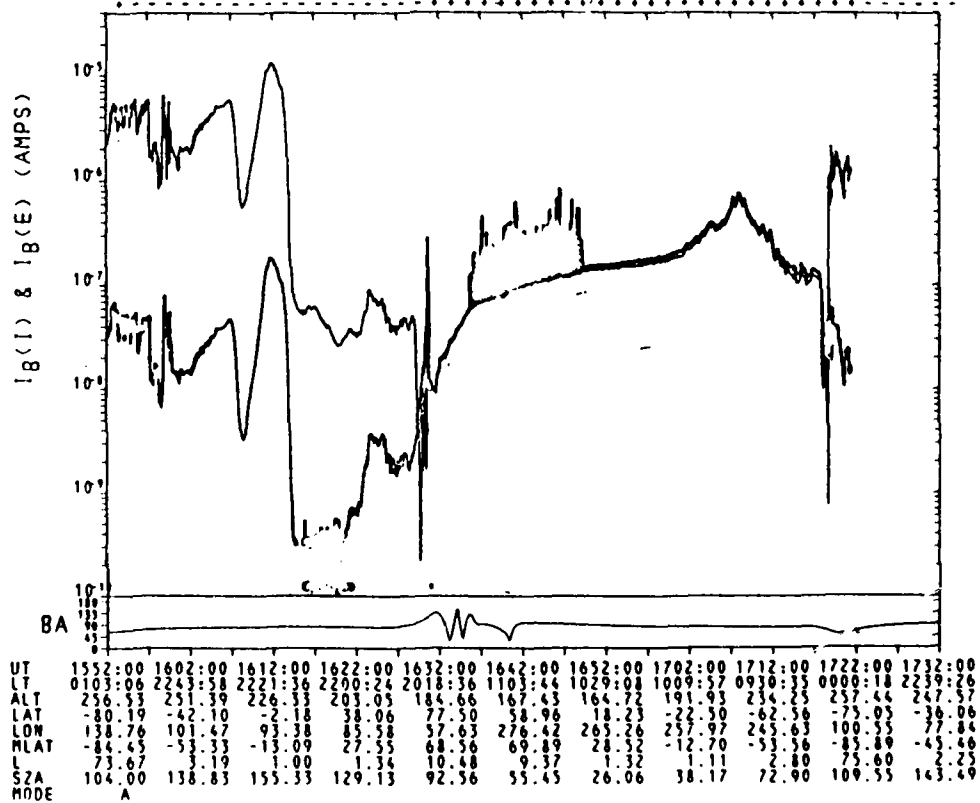


NRL 747

04/01/78

REV 0258

FORMAT A

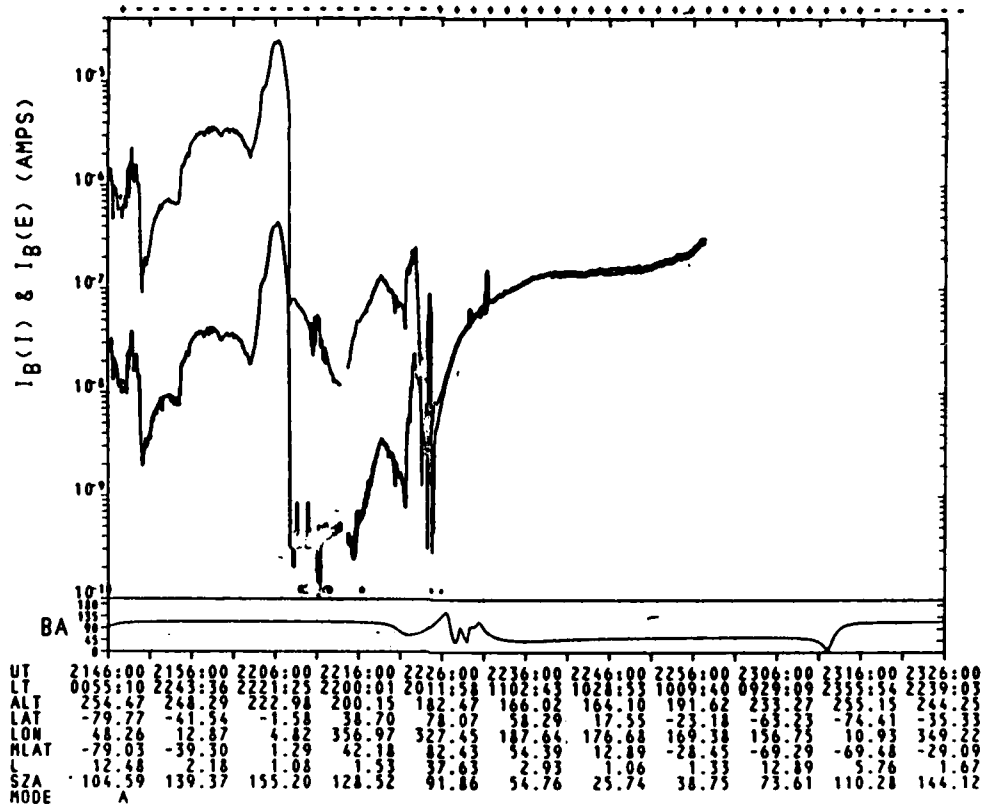


NRL 747

04/01/78

REV 0262

FORMAT A

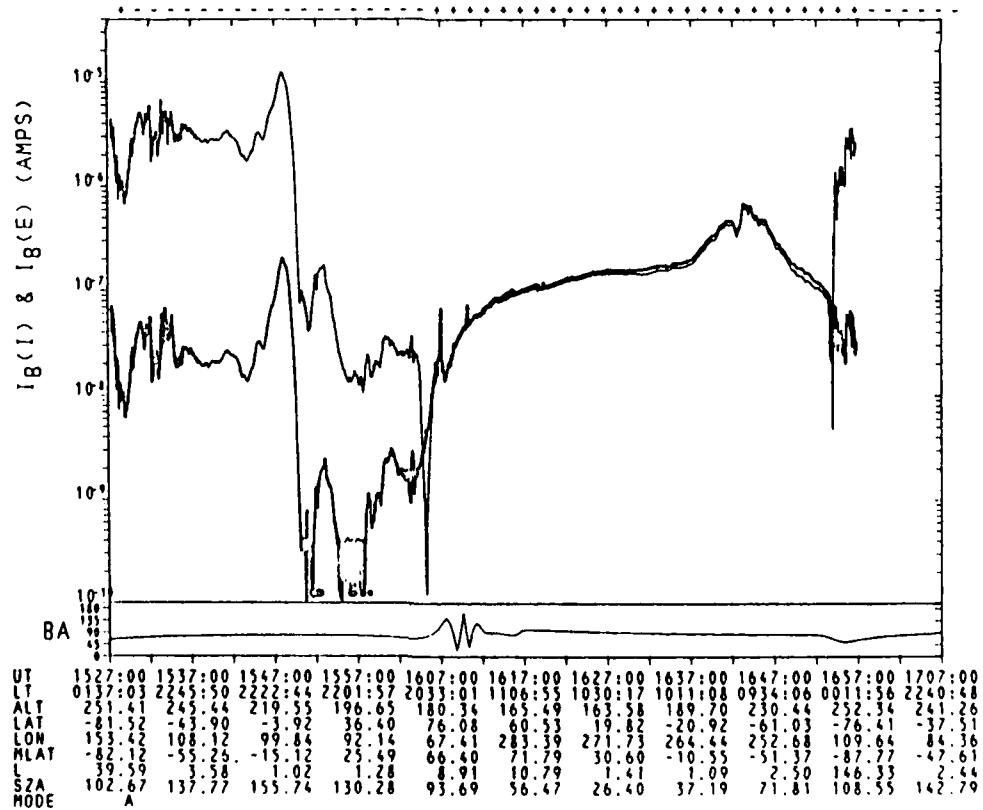


NRL 747

04/02/78

REV 0274

FORMAT A

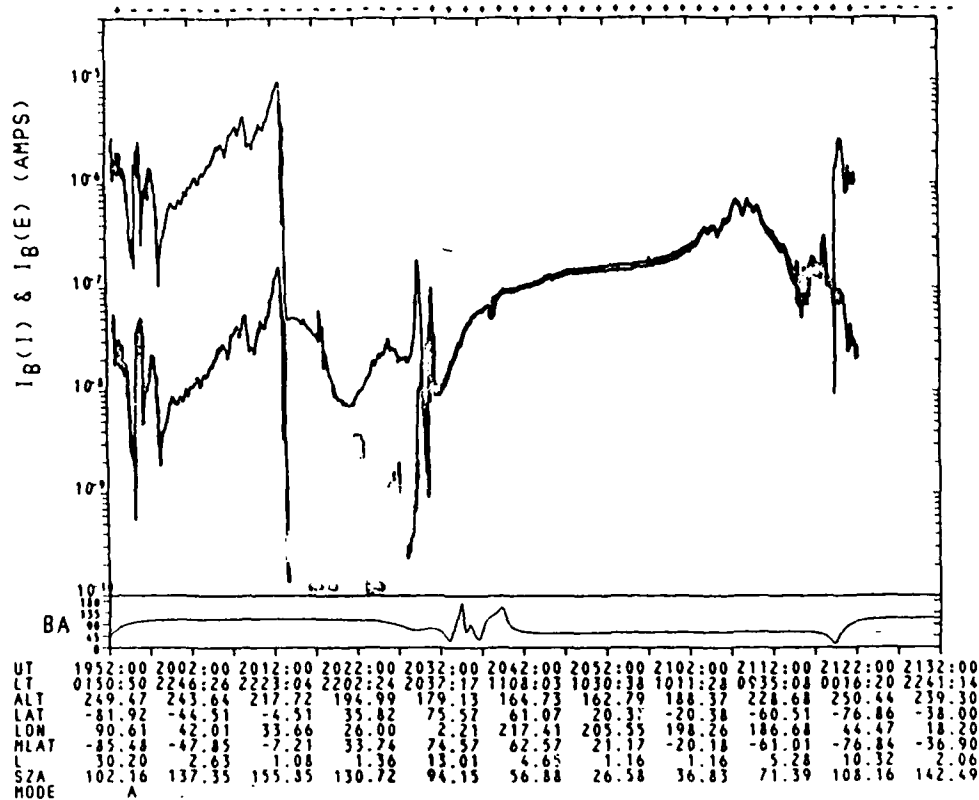


NRL 747

04/02/78

REV 0277

FORMAT A

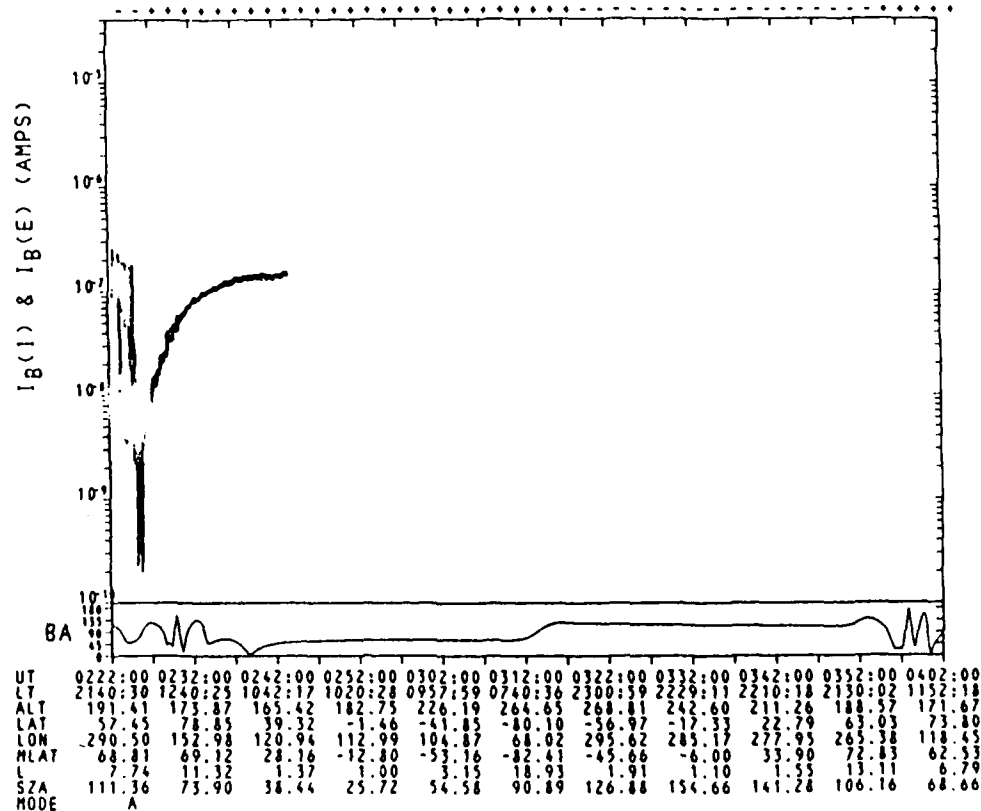


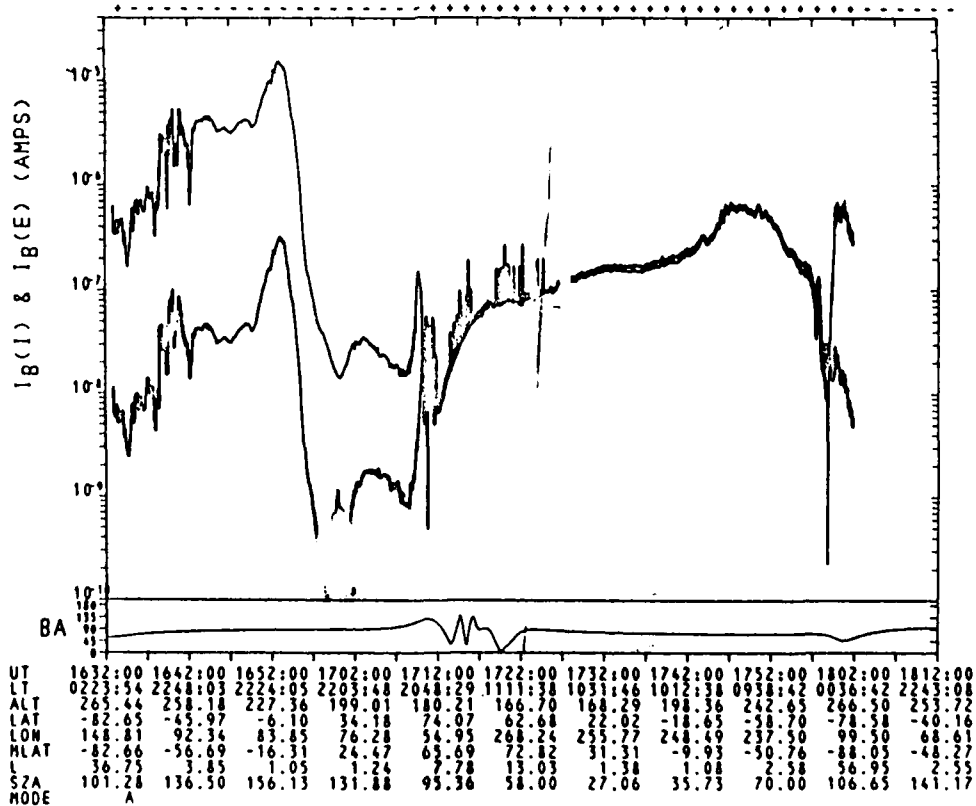
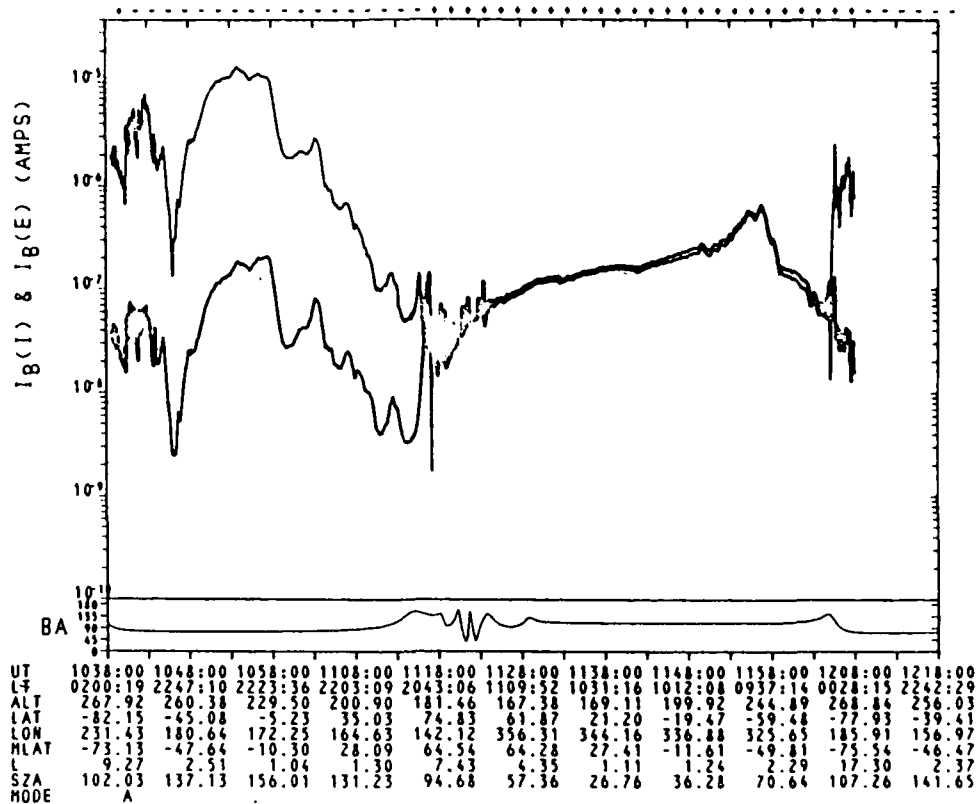
NRL 747

04/03/78

REV 0282

FORMAT A





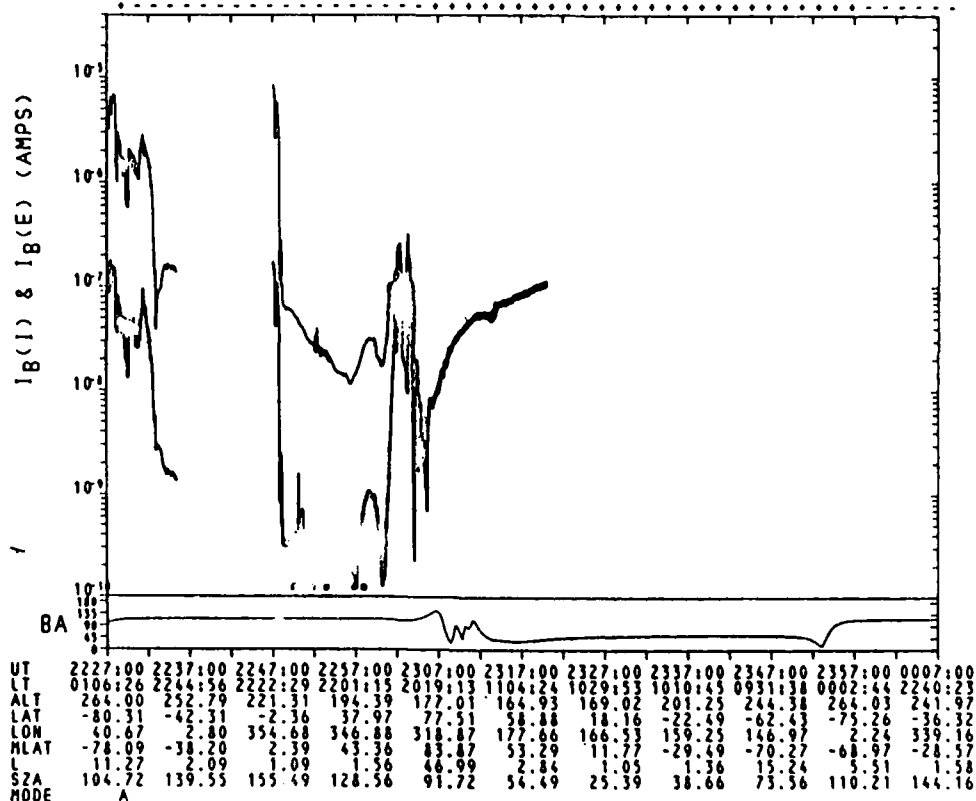


NRL 747

04/03/78

REV 0295

FORMAT A

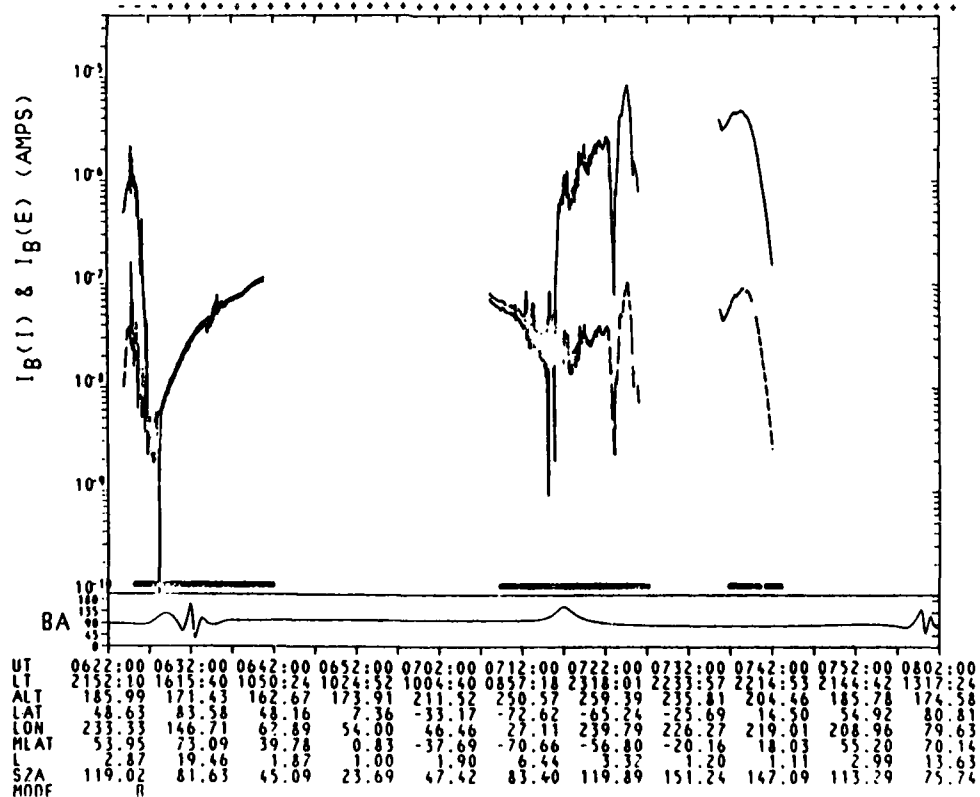


NRL 747

04/04/78

REV 0301

FORMAT C

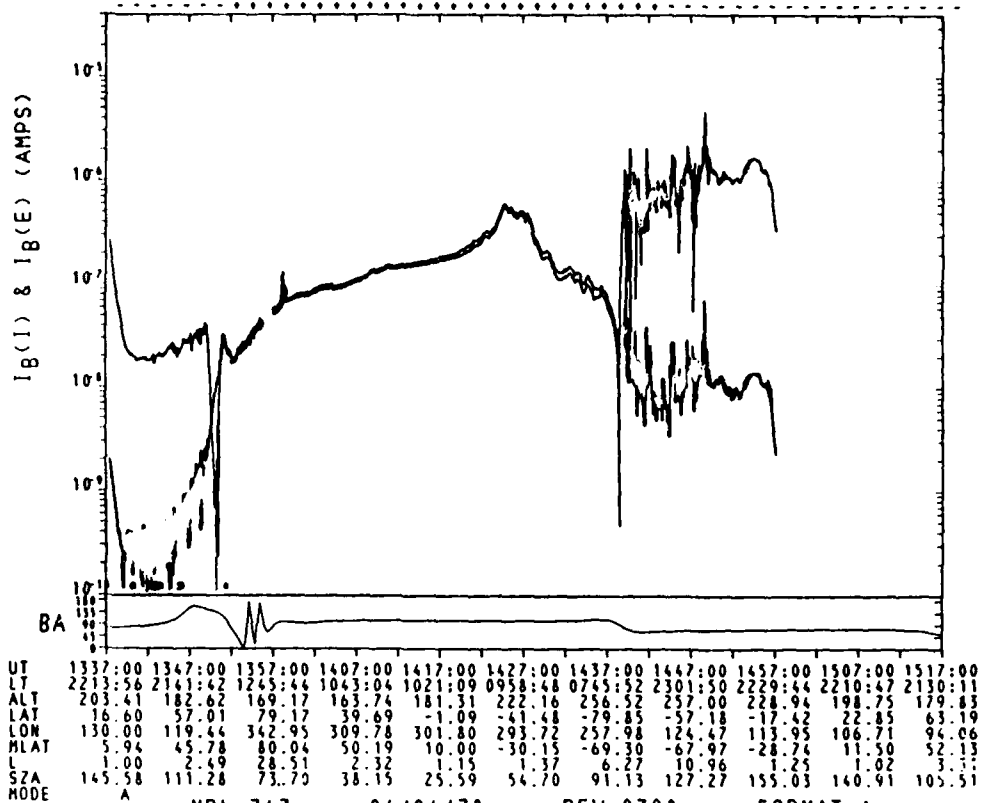


NRL 747

04/04/78

REV 0306

FORMAT A

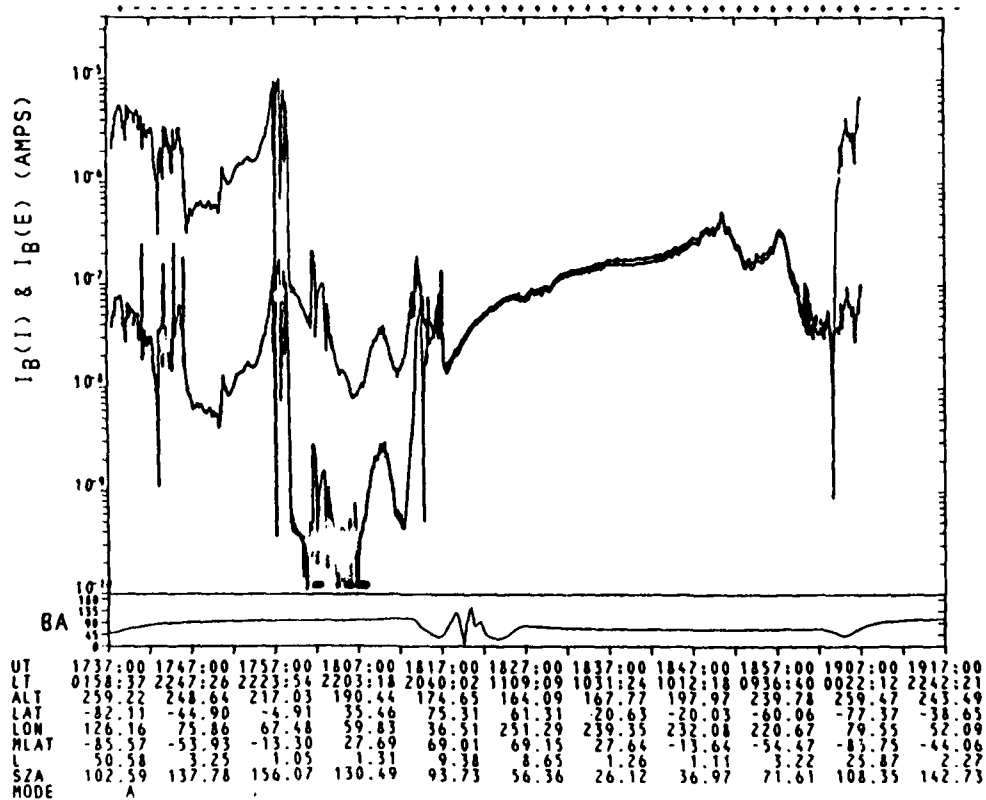


NRL 747

04/04/78

REV 0308

FORMAT A

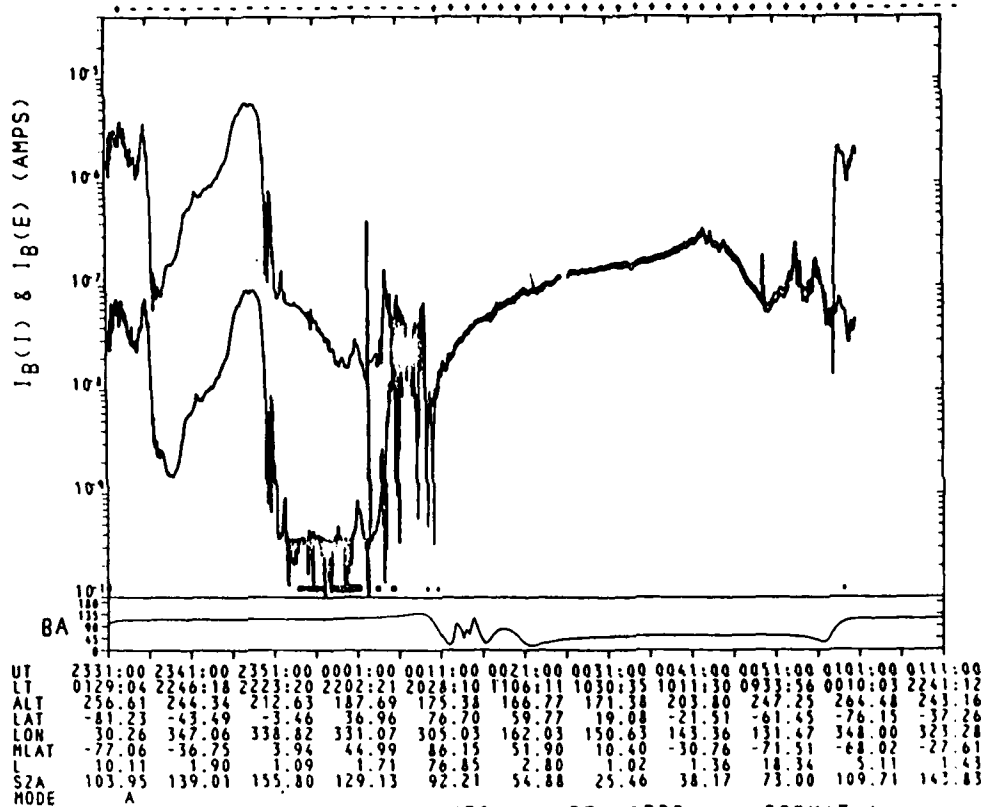


NRL 747

04/04/78

REV 0312

FORMAT A

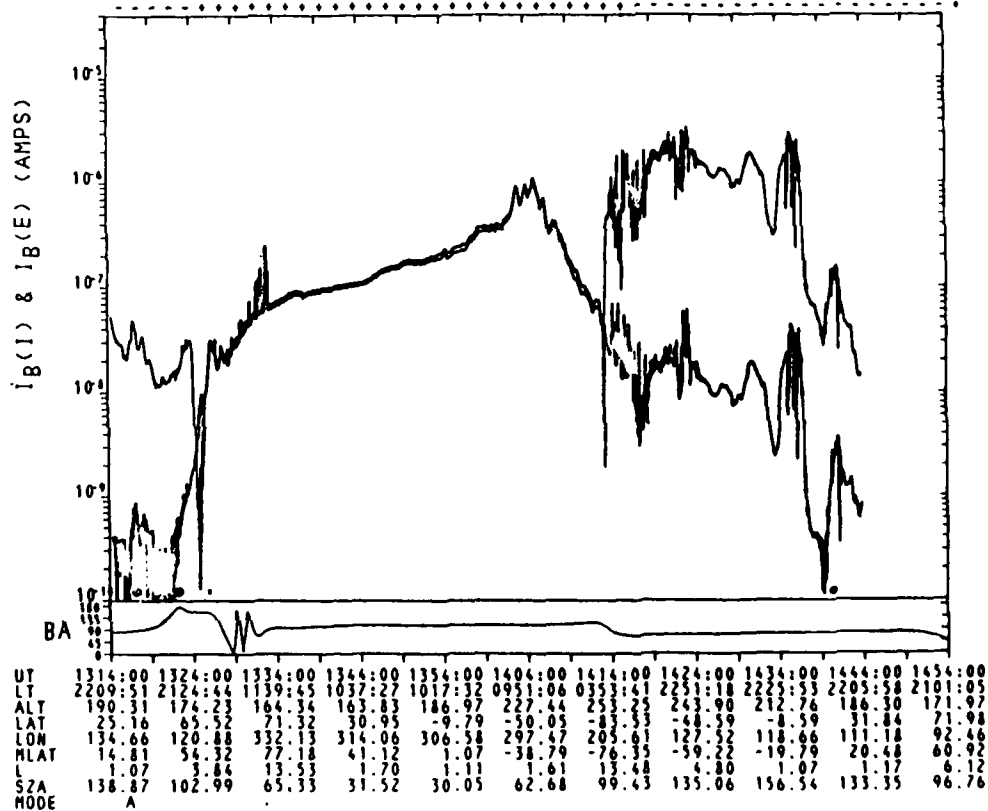


NRL 747

04/05/78

REV 0322

FORMAT A

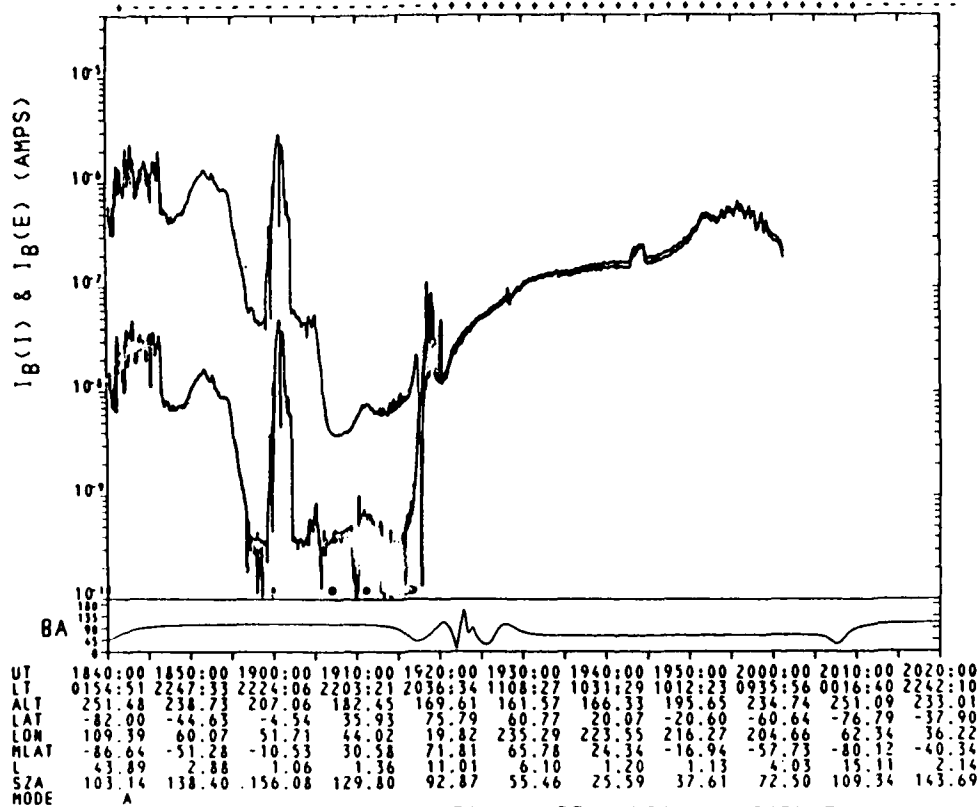


NRL 747

04/05/78

REV 0325

FORMAT A

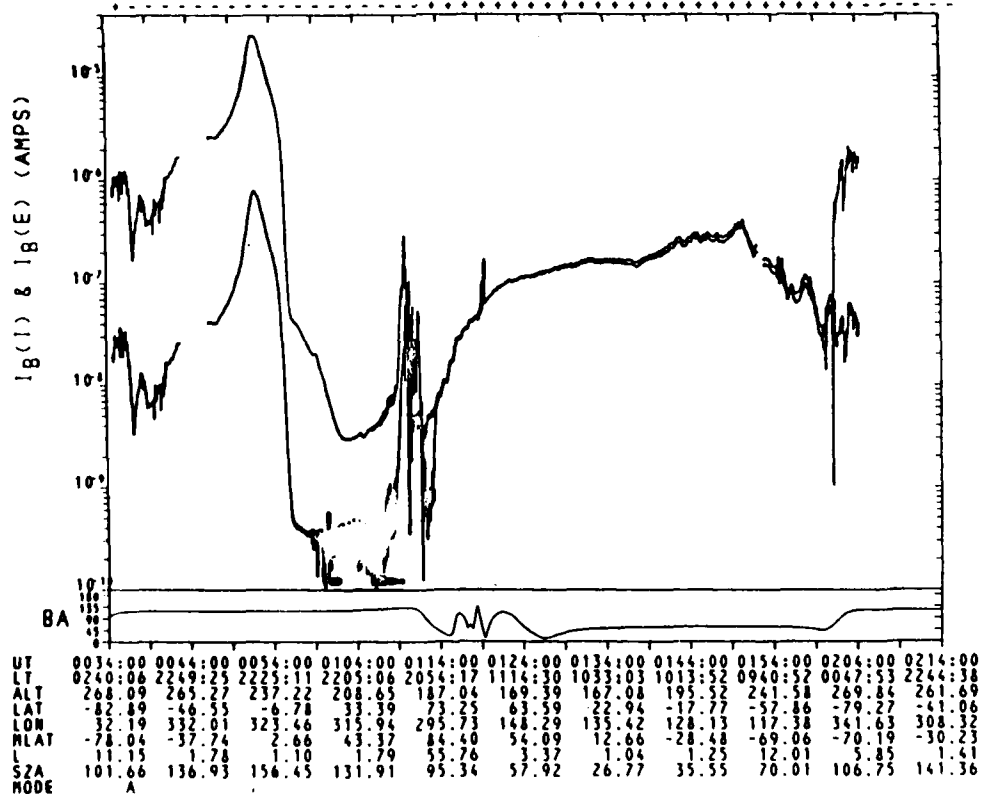


NRL 747

04/06/78

REV 0329

FORMAT A

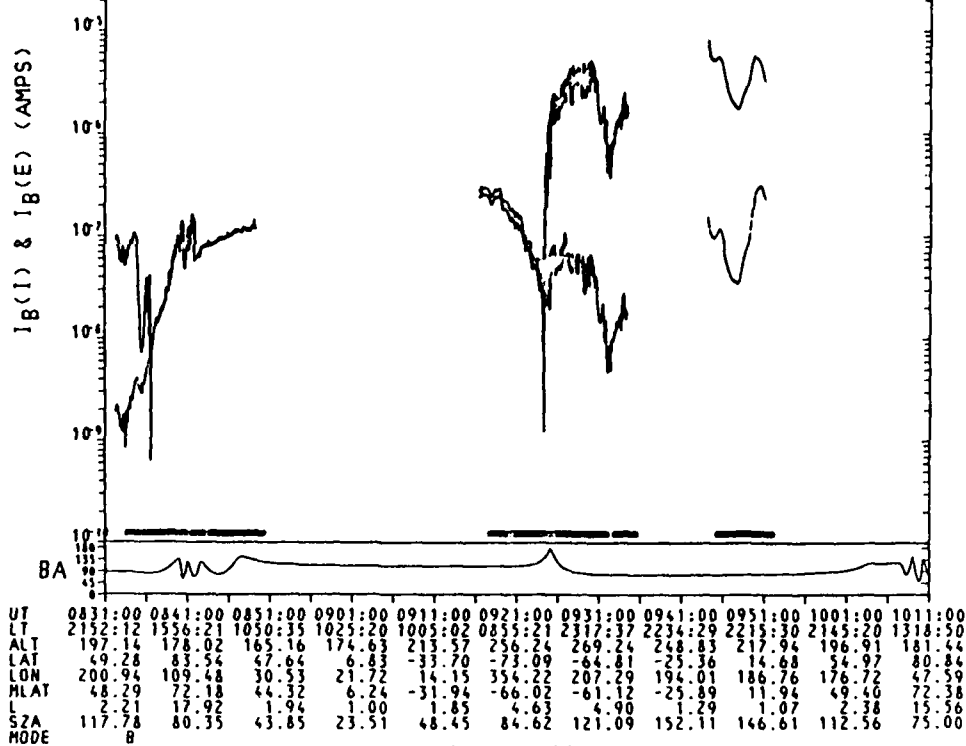


NRL 747

04/06/78

REV 0335

FORMAT C

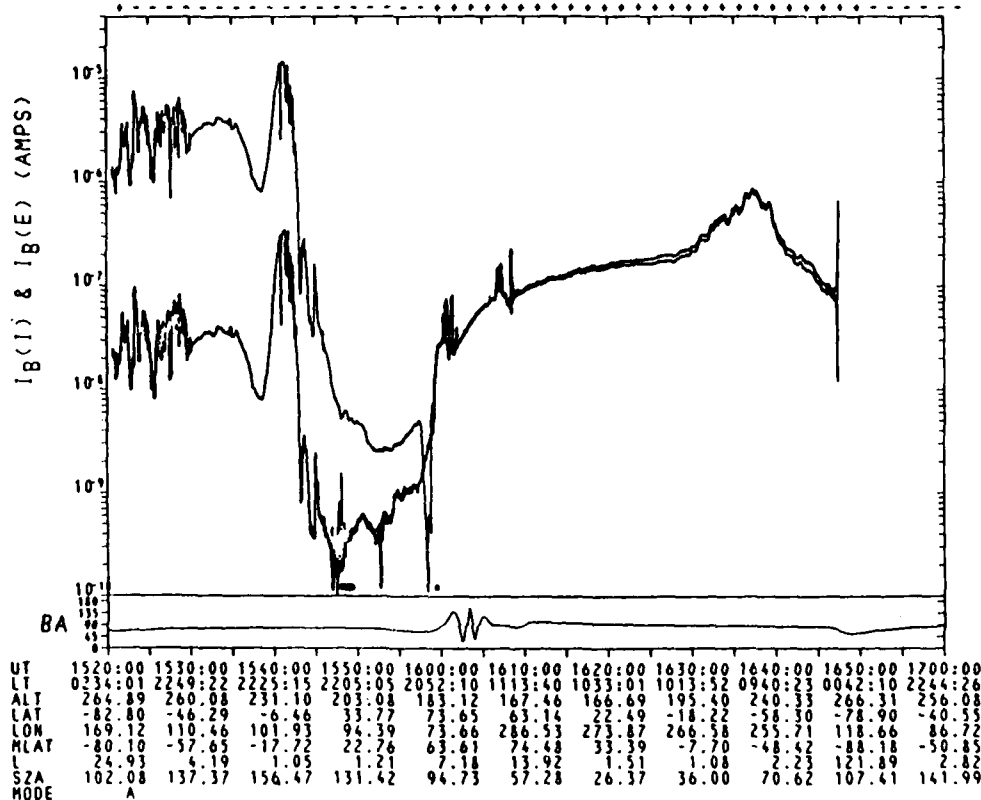


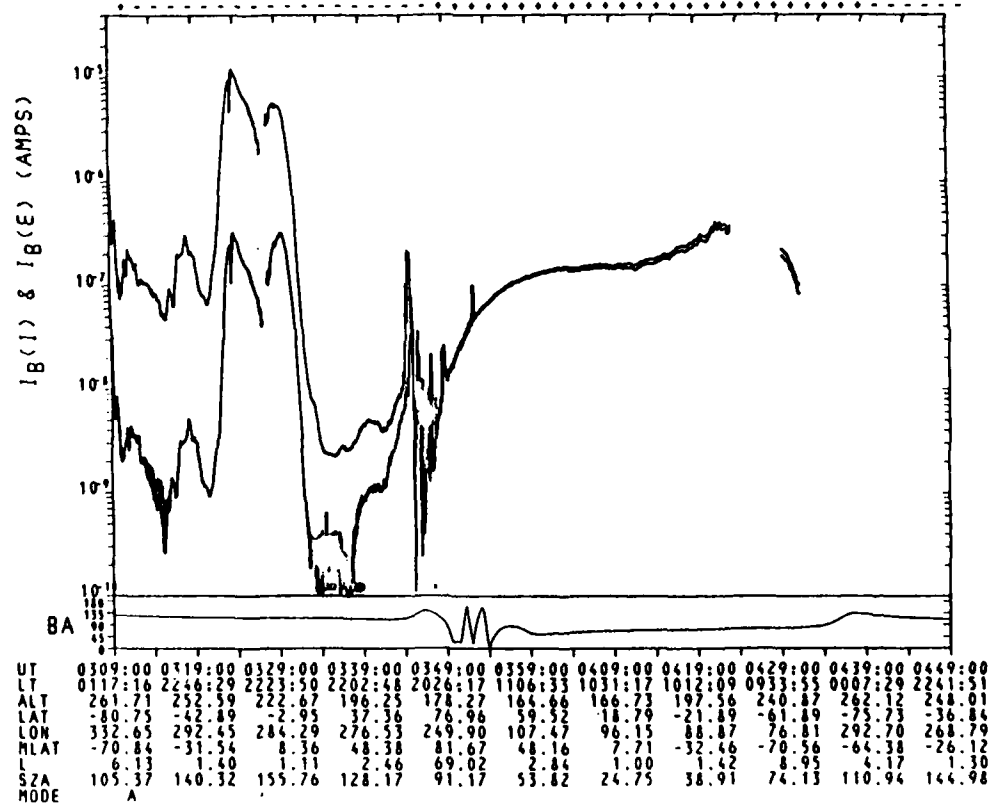
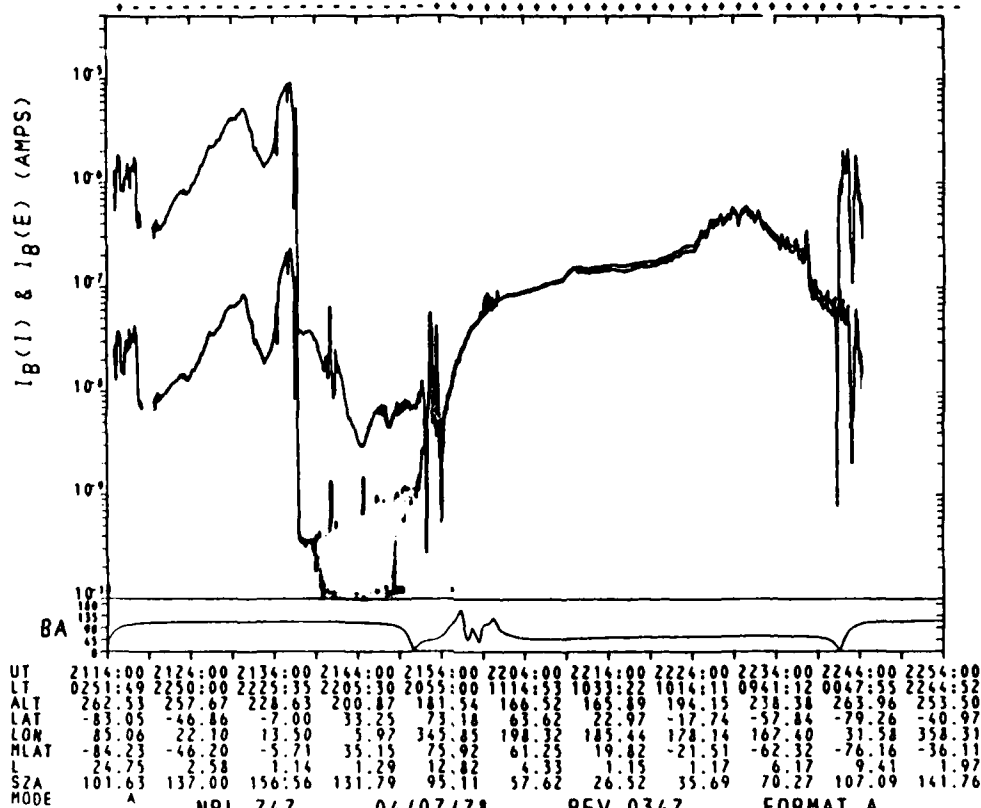
NRL 747

04/06/78

REV 0339

FORMAT A



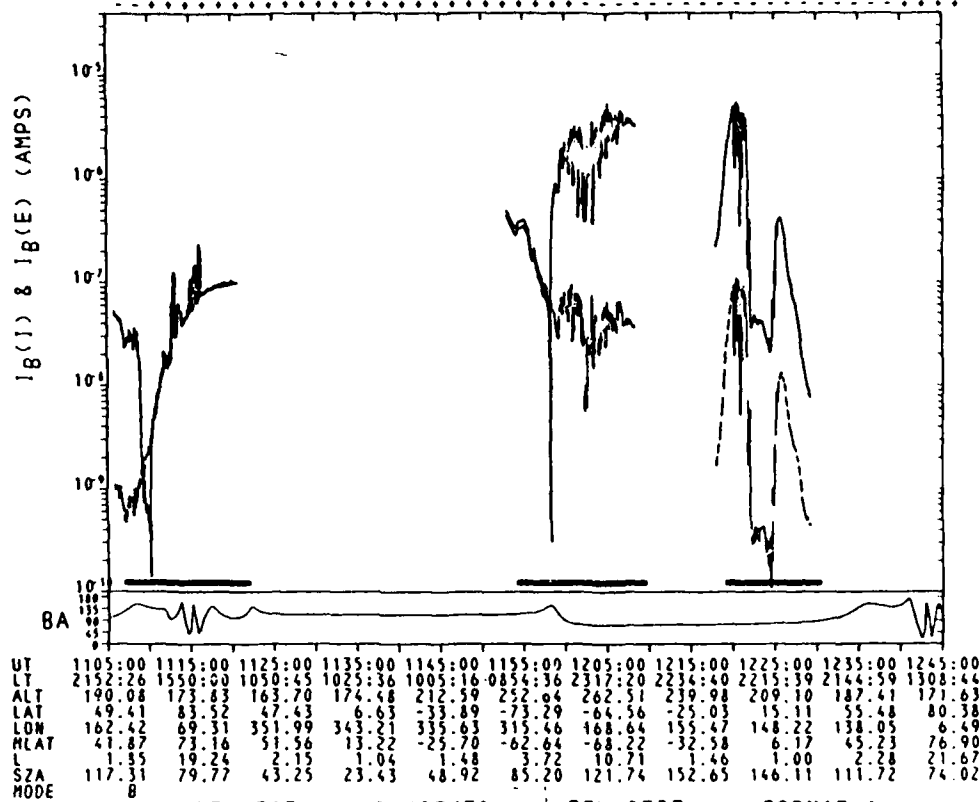


NRL 747

04/07/78

REV 0353

FORMAT C

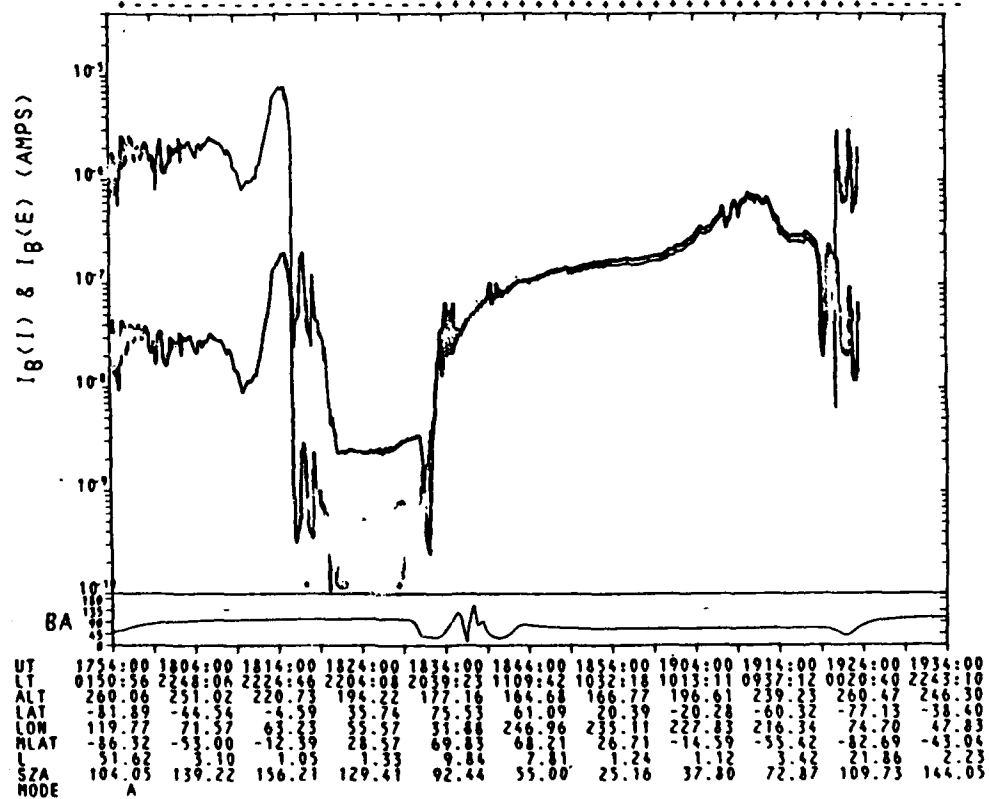


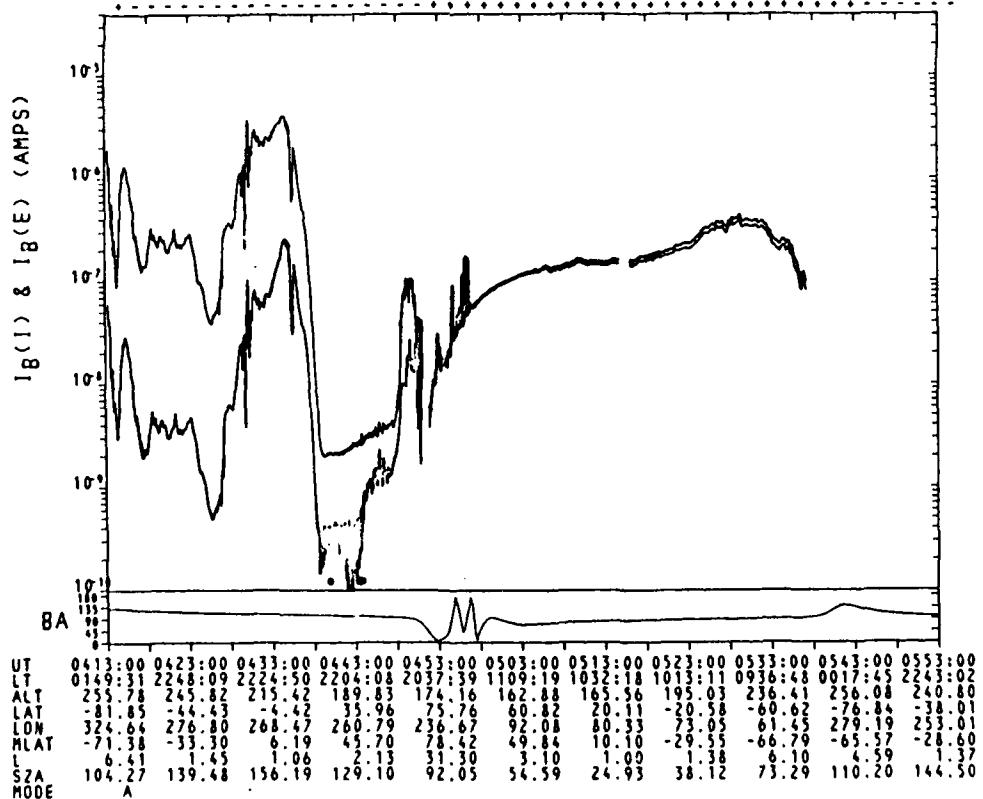
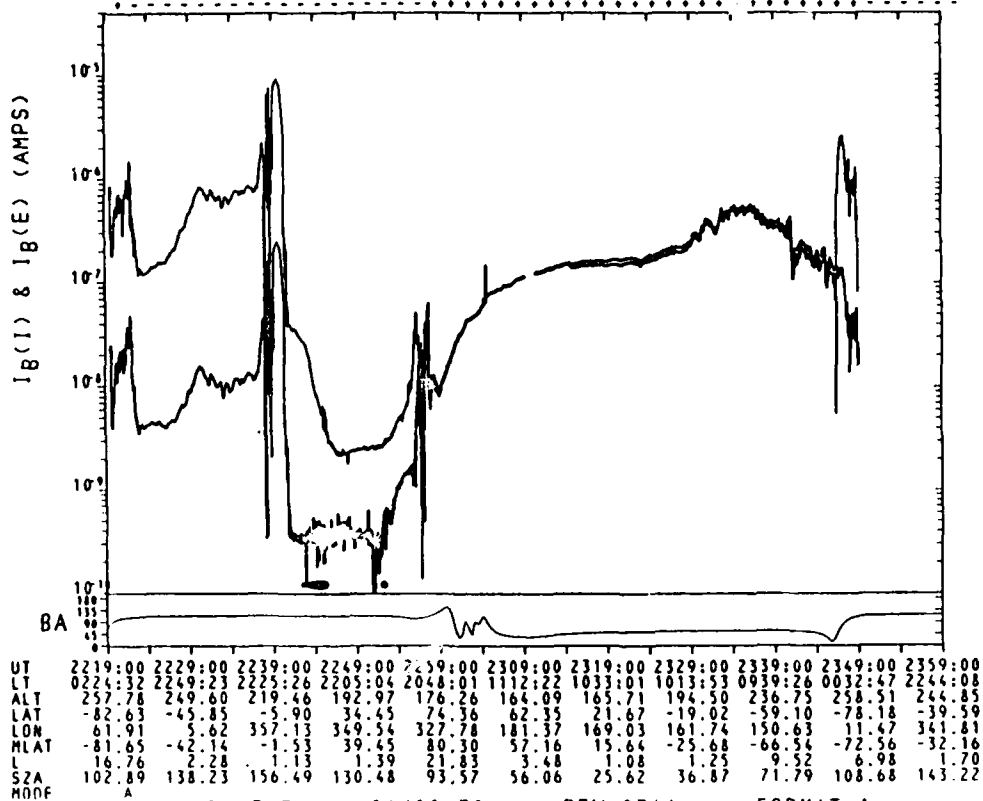
NRL 747

04/07/78

REV 0357

FORMAT A





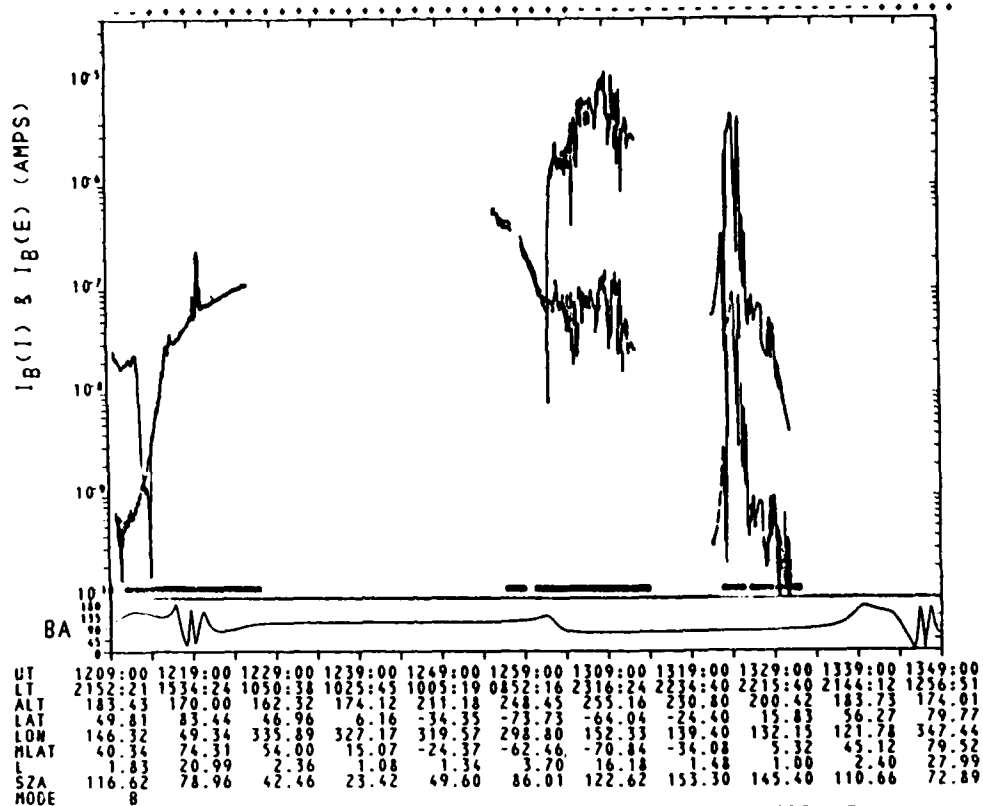


NRL 747

04/08/78

REV 0370

FORMAT C

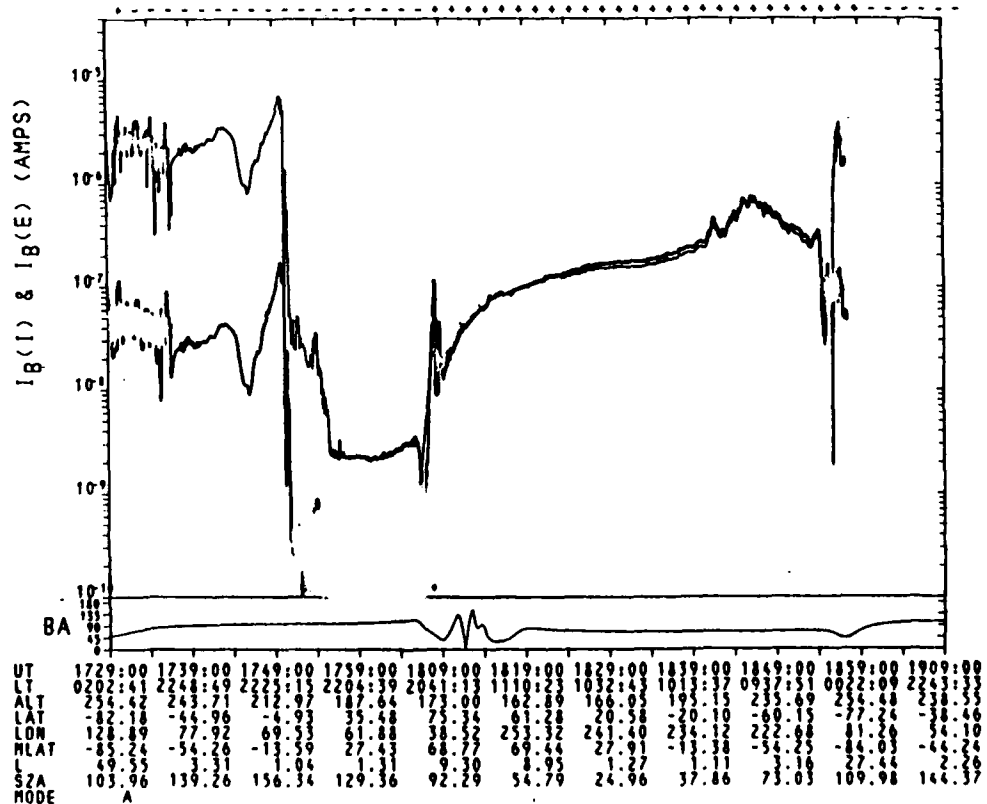


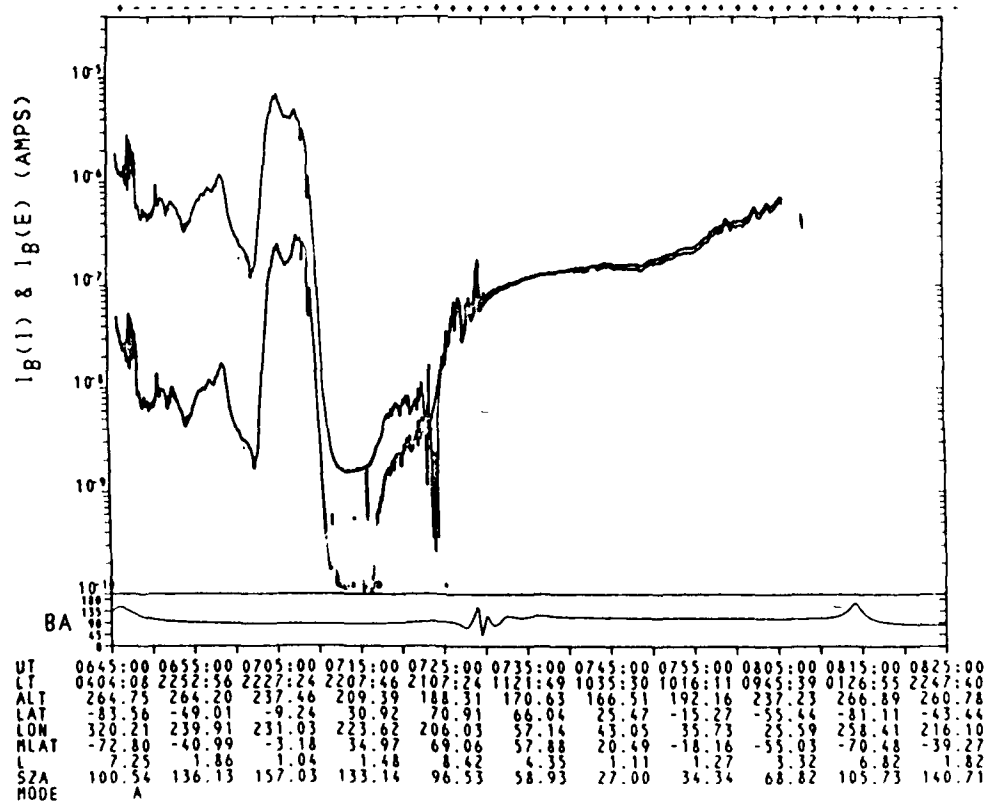
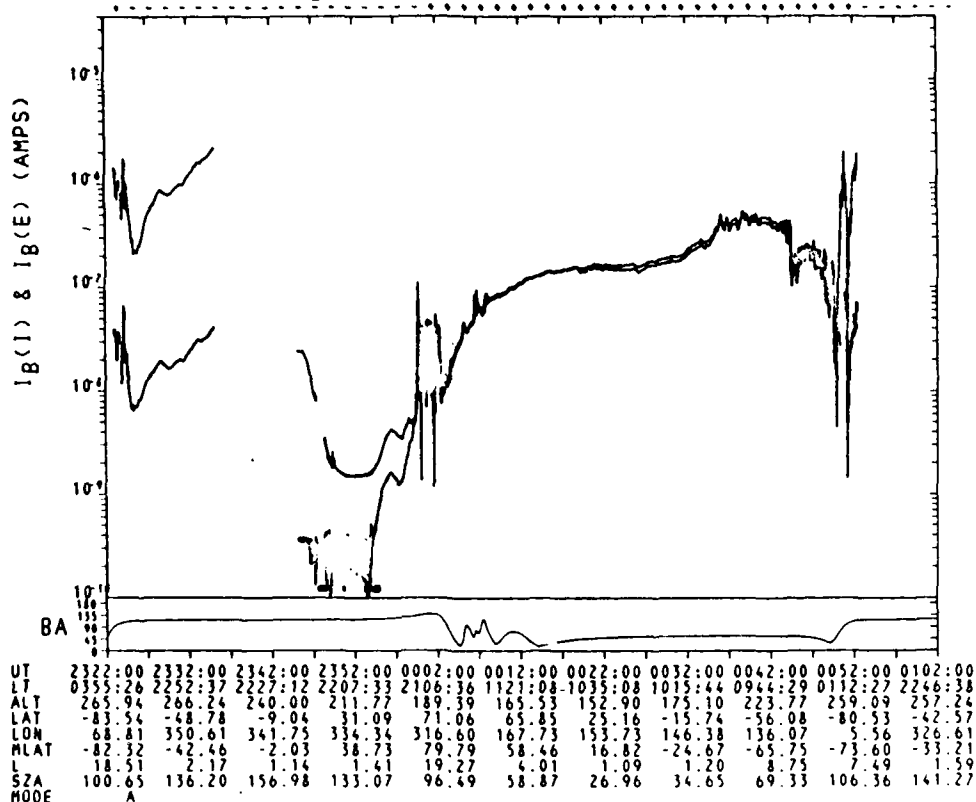
NRL 747

04/08/78

REV 0373

FORMAT A



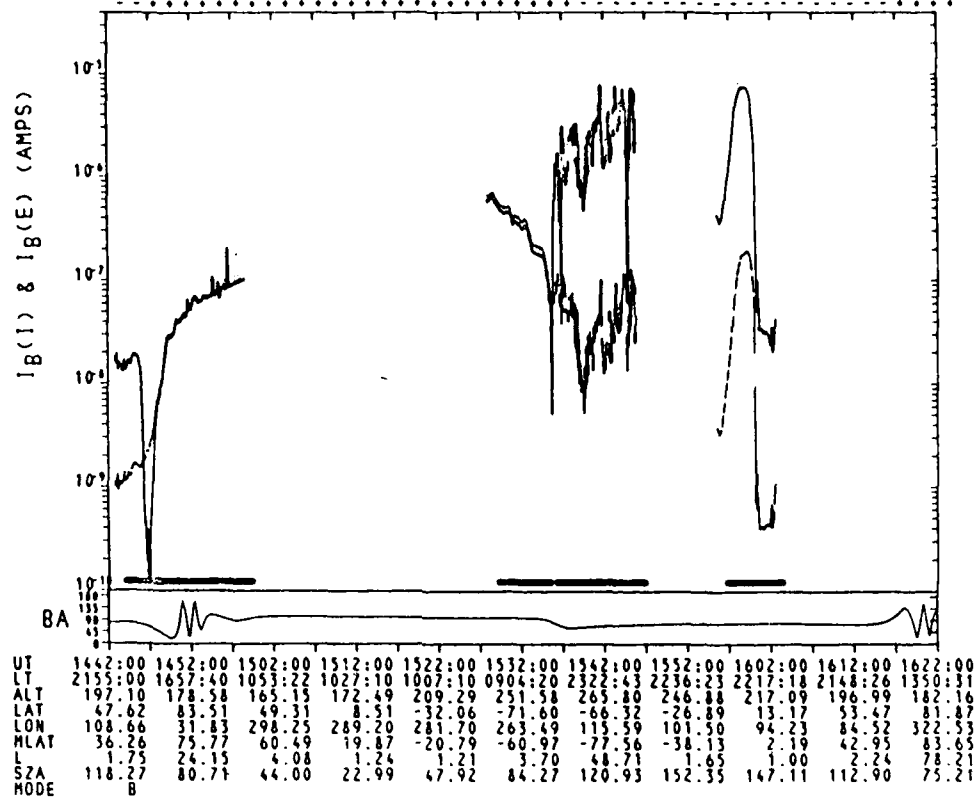


NRL 747

04/09/78

REV 0388

FORMAT C

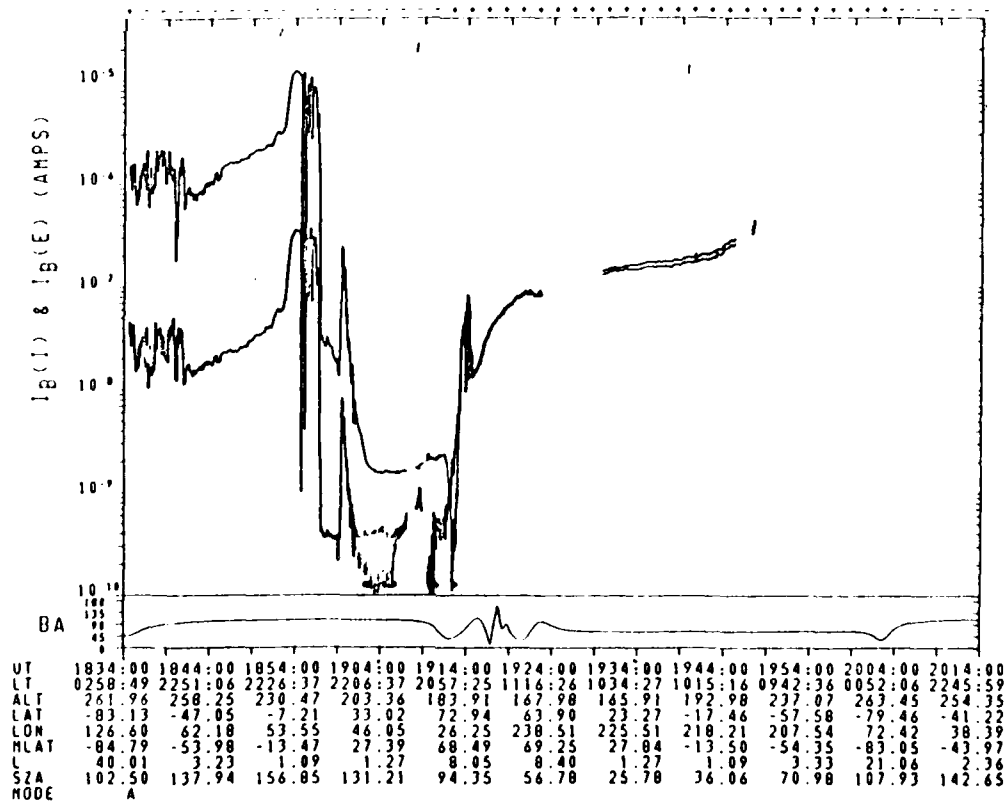


NRL 747

04/09/78

REV 0390

FORMAT A

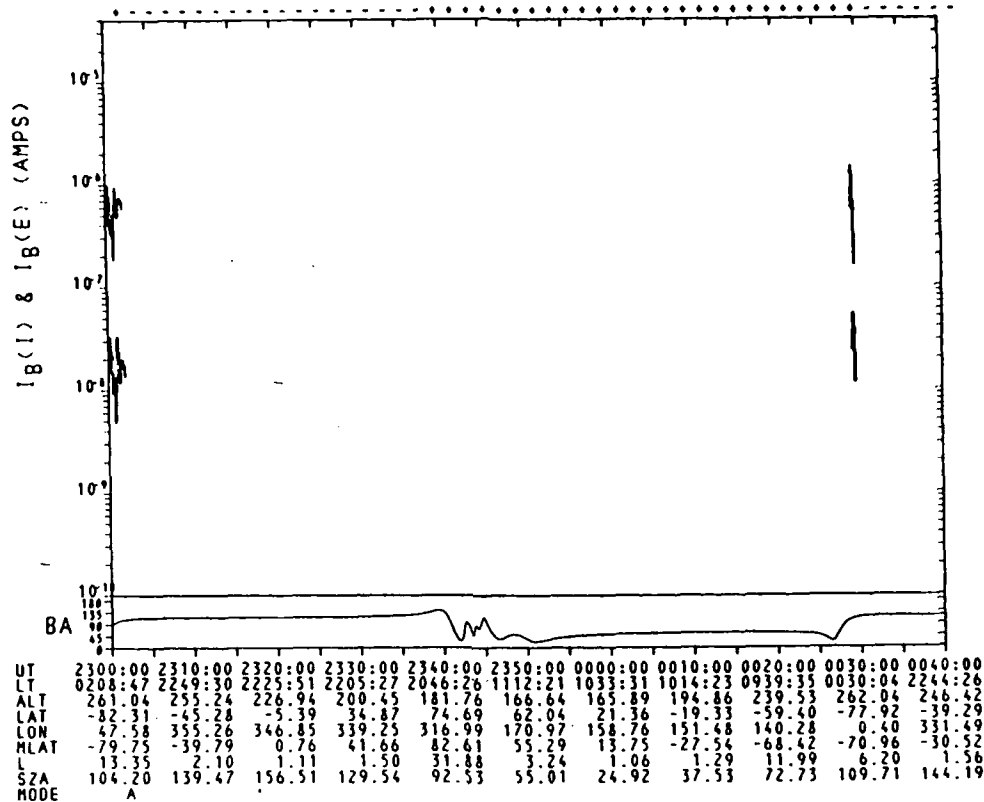


NRL 747

04/09/78

REV 0393

FORMAT A

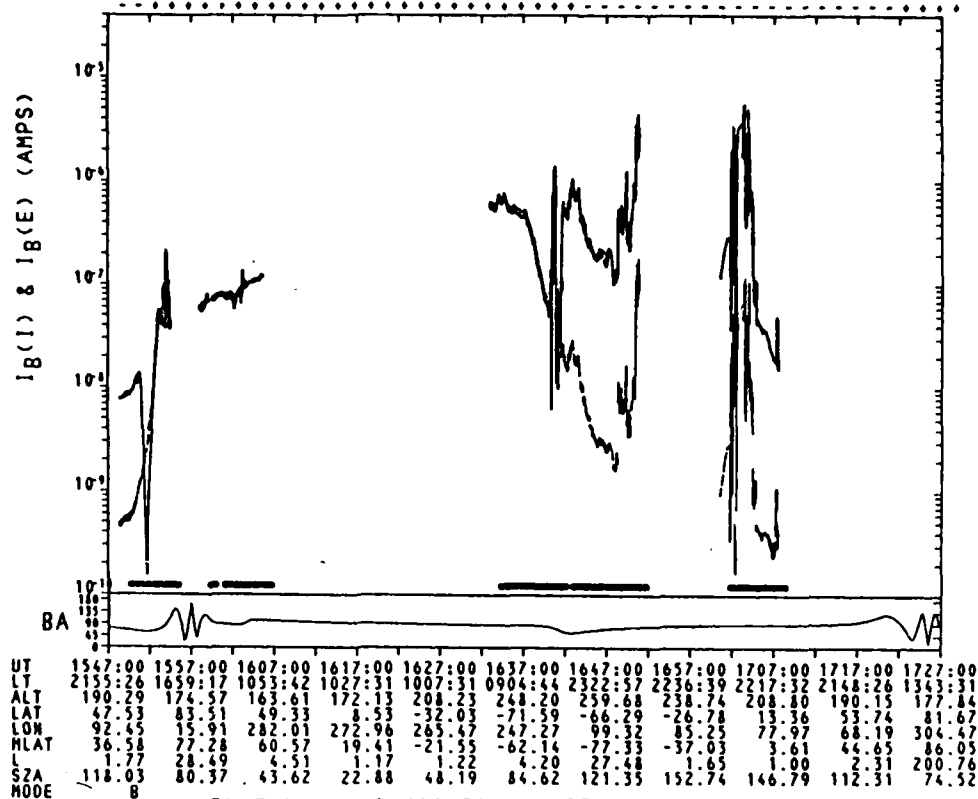


NRL 747

04/10/78

REV 0405

FORMAT C

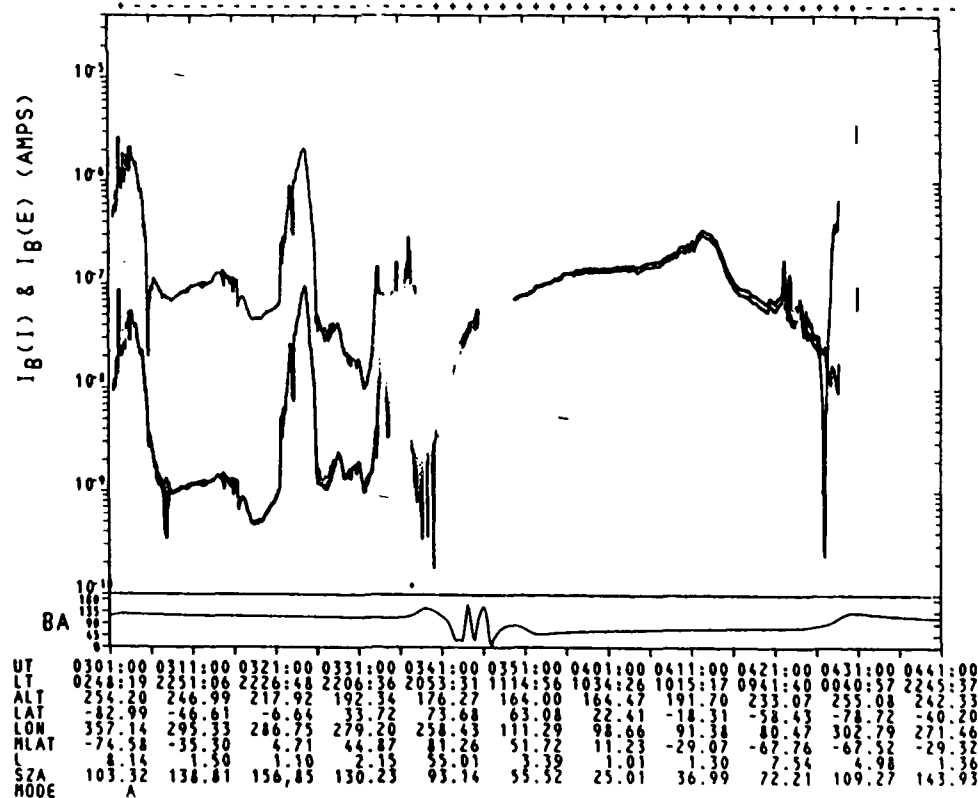


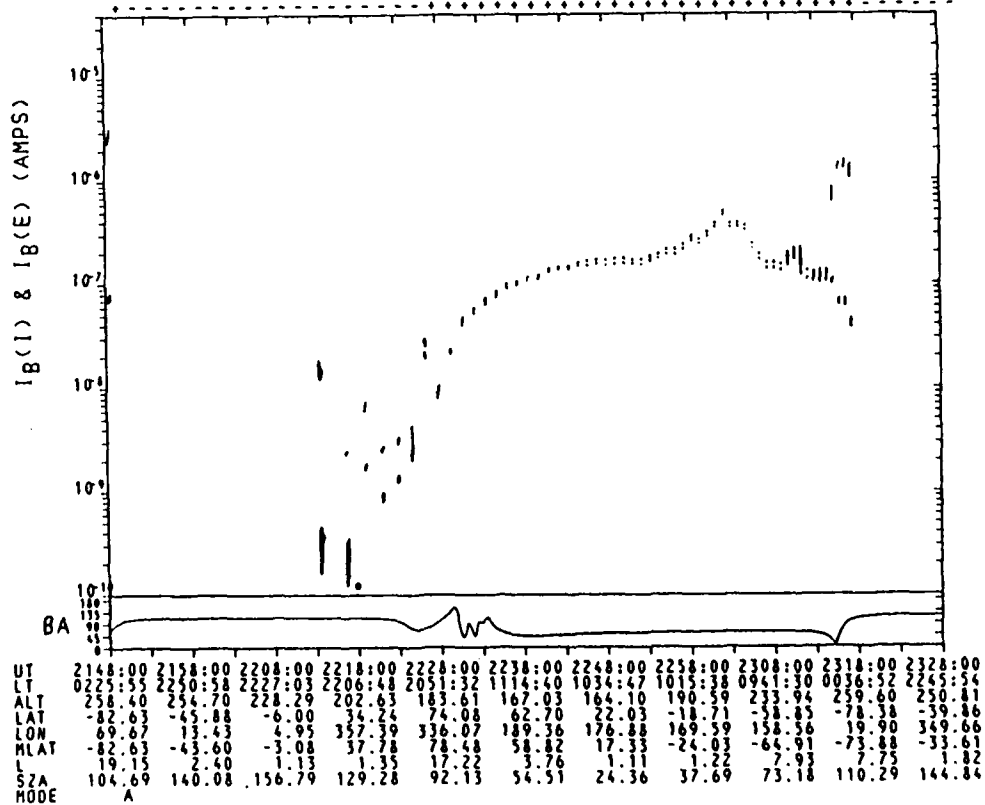
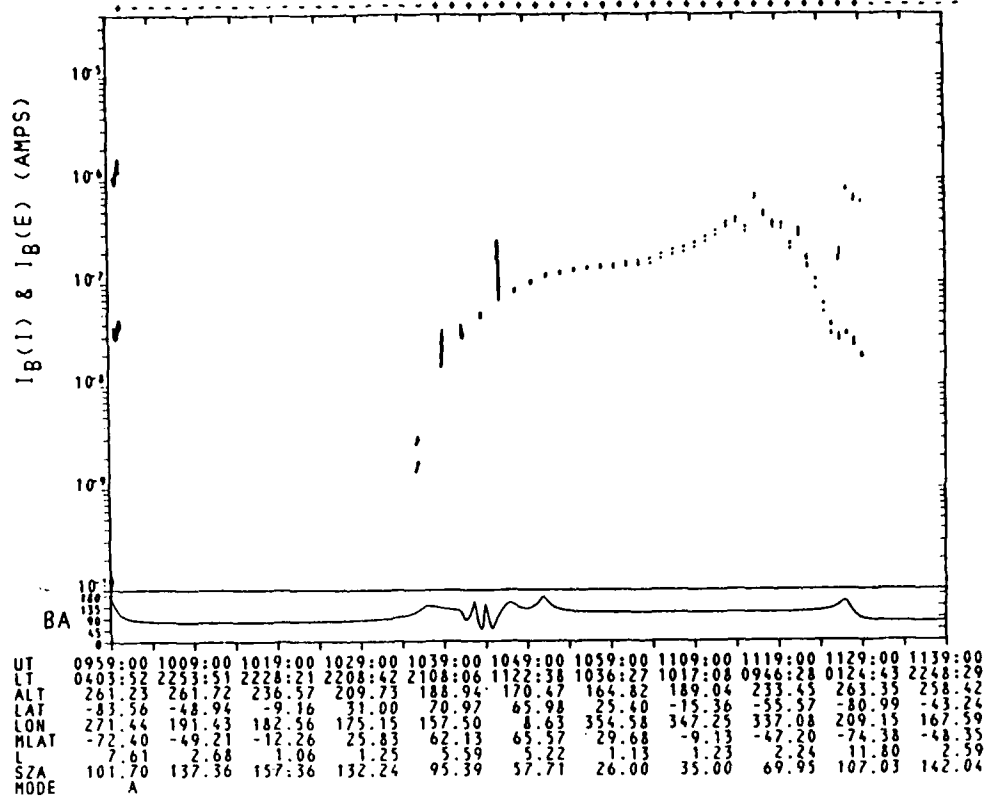
NRL 747

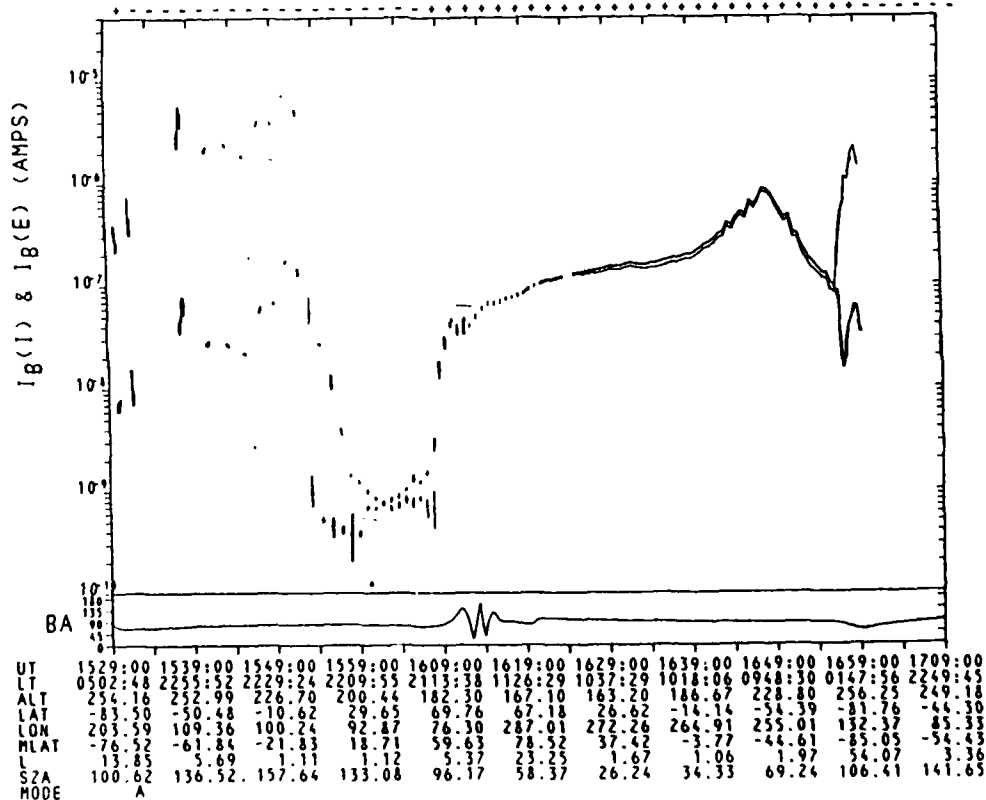
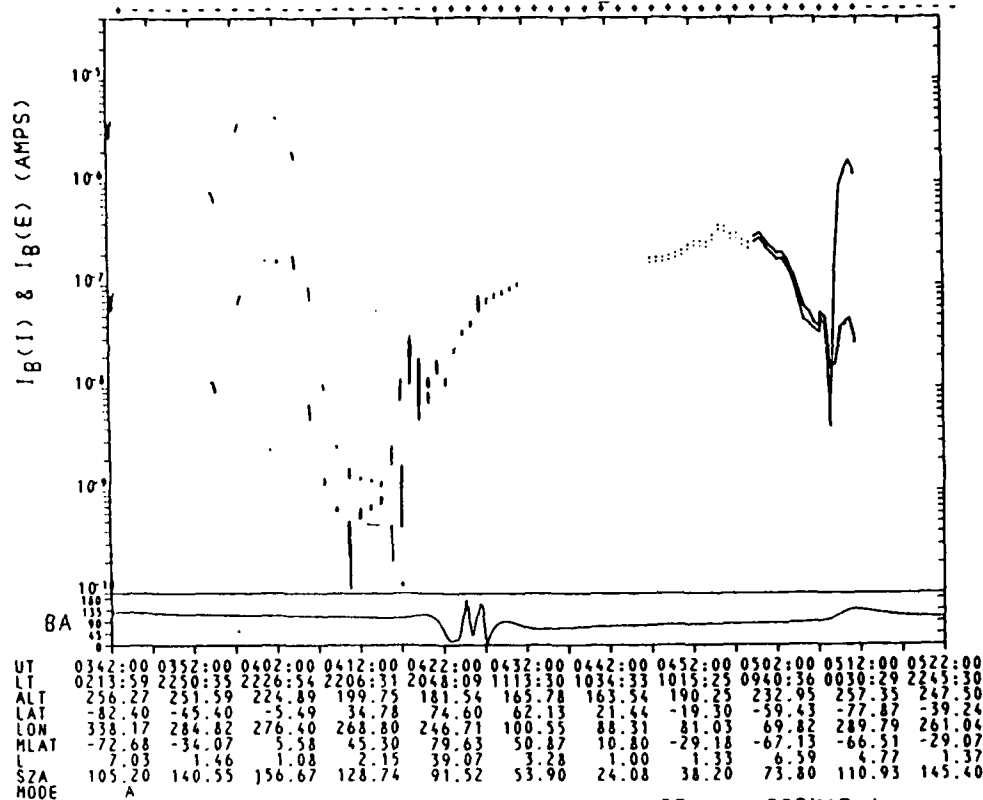
04/11/78

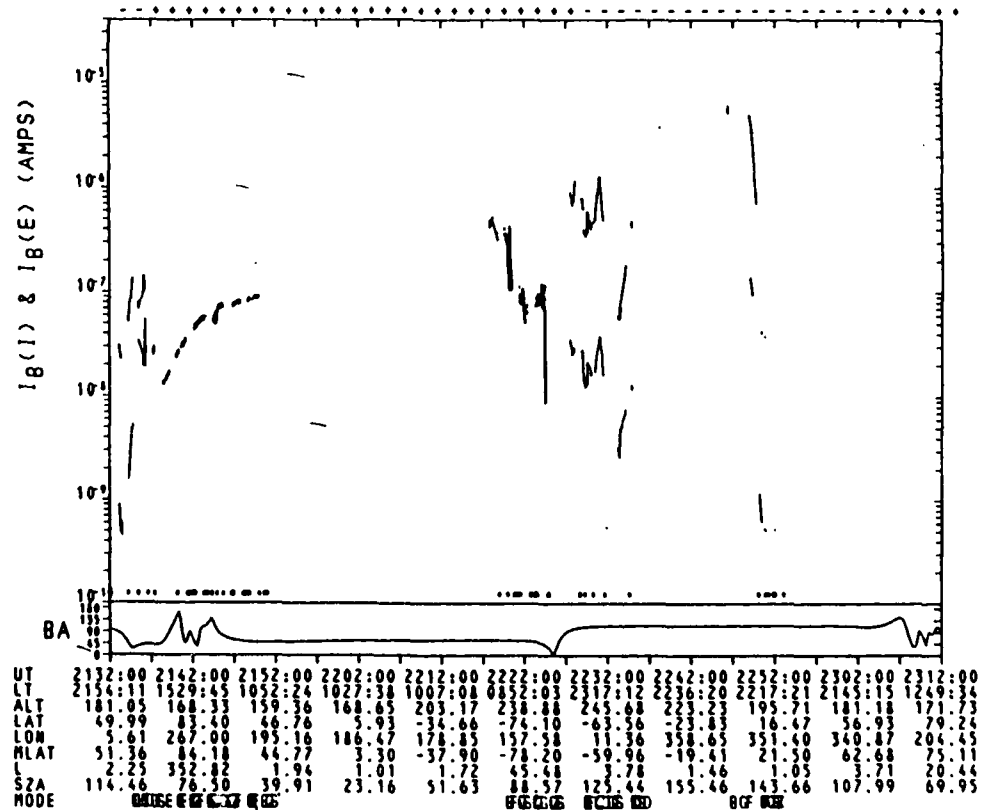
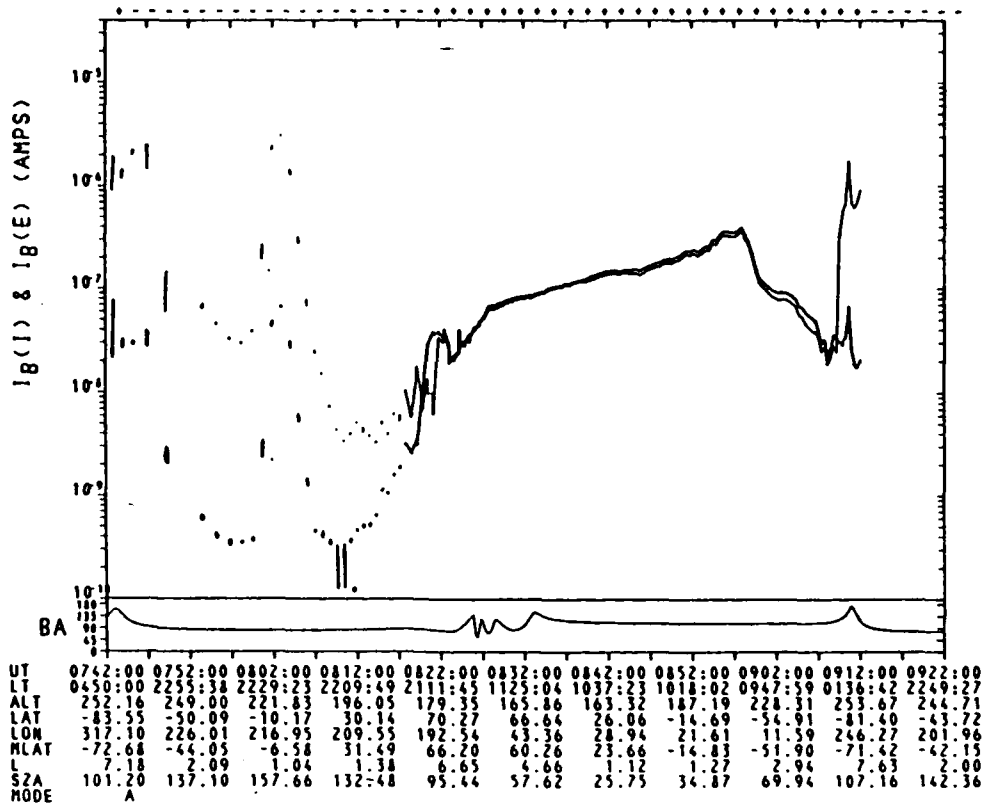
REV 0412

FORMAT A









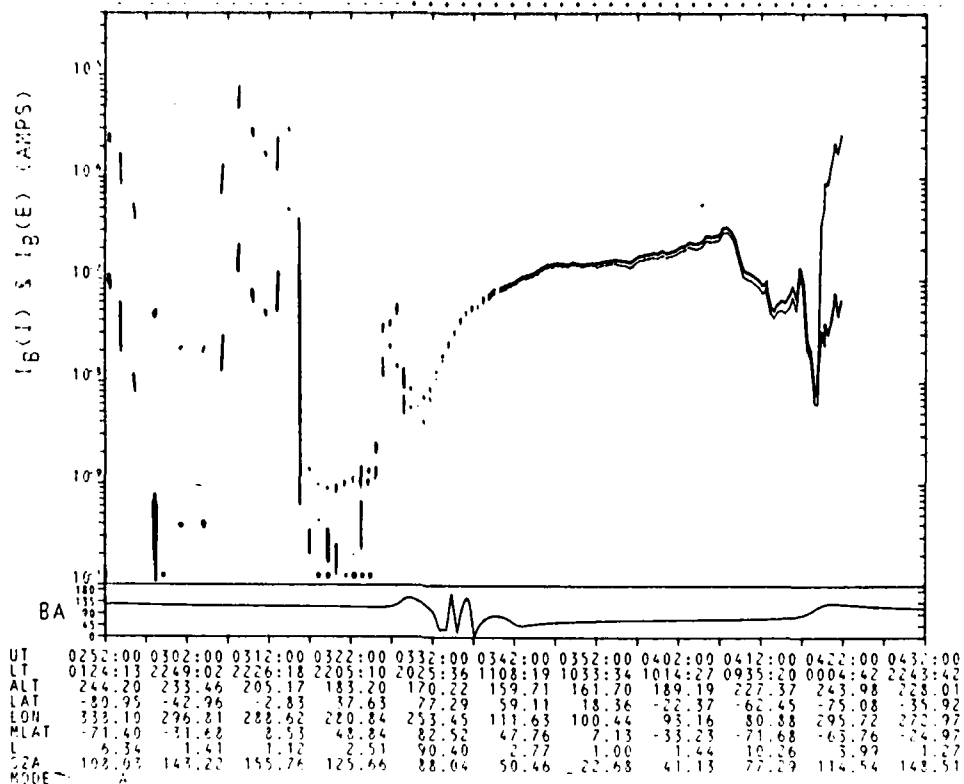


NRL 747

04/15/78

REV 0477

FORMAT A

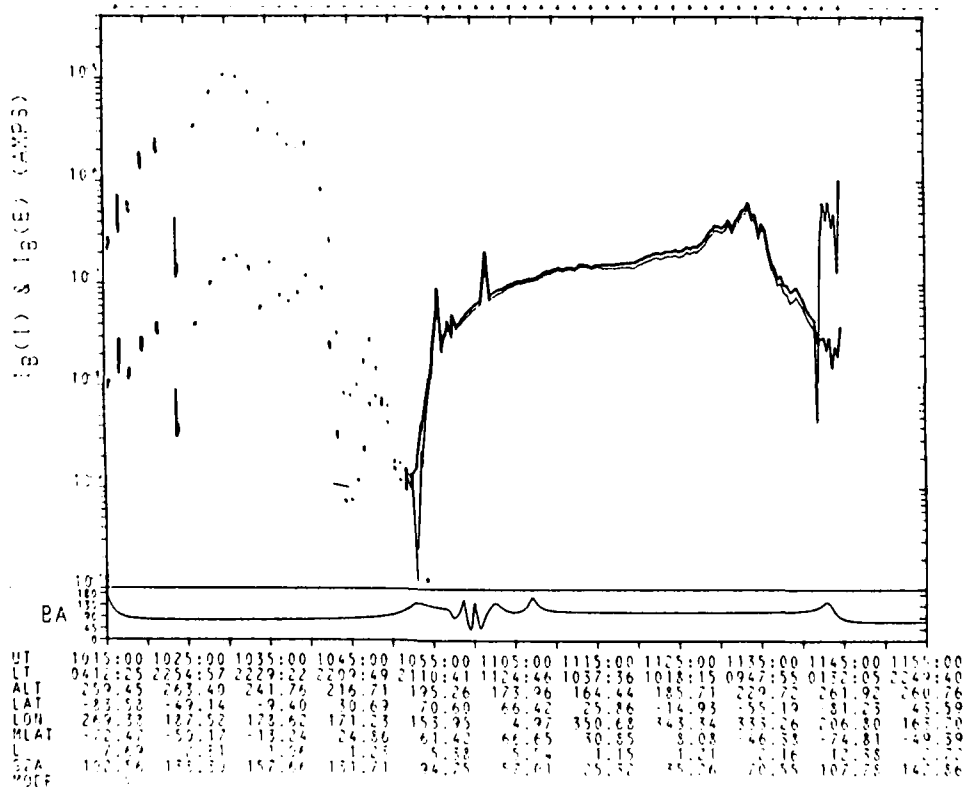


NRL 747

04/15/78

REV 0482

FORMAT A

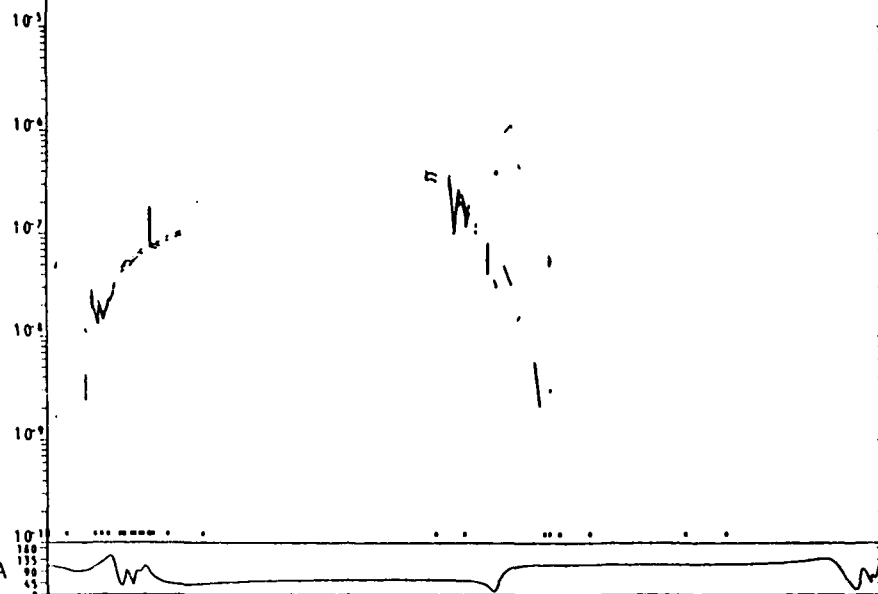


NRL 747

04/15/78

REV 0491

FORMAT C

 $I_B(I)$  &  $I_B(E)$  (AMPS)

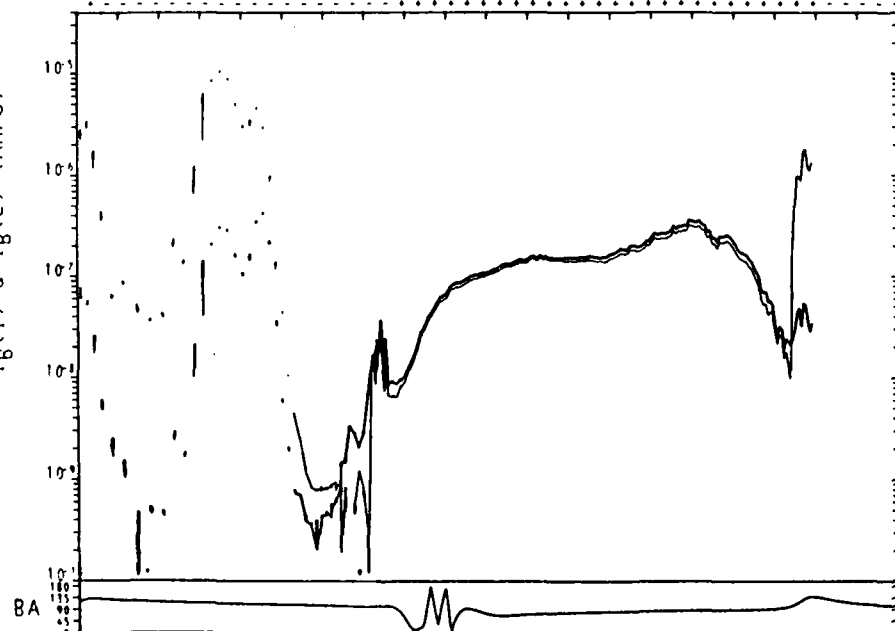
UT	2238:00	2248:00	2258:00	2308:00	2318:00	2328:00	2338:00	2348:00	2358:00	0008:00	0018:00
LT	2155:40	1615:46	1054:03	1028:33	1008:13	0859:42	2320:31	2237:30	2218:33	2148:33	1324:34
ALT	201.60	181.95	164.85	168.43	202.91	244.75	260.74	245.63	219.81	201.19	184.42
LAT	46.89	83.58	148.13	7.29	-33.34	-72.88	-64.93	-25.43	-14.61	54.83	80.97
LOH	349.41	261.94	179.01	170.14	162.57	142.92	355.71	342.37	335.13	325.13	196.72
MLAT	53.45	83.62	43.18	1.67	-39.60	-80.16	-58.71	-18.29	22.35	63.33	75.20
L	2.33	254.78	1.87	1.00	1.81	125.93	3.43	1.38	1.10	63.33	75.20
SZA	115.17	77.34	40.66	22.75	50.75	87.69	124.55	155.04	144.87	109.61	71.69
MODE	G EMISSIONS OF					BB BB C FB FB FB FB					

NRL 747

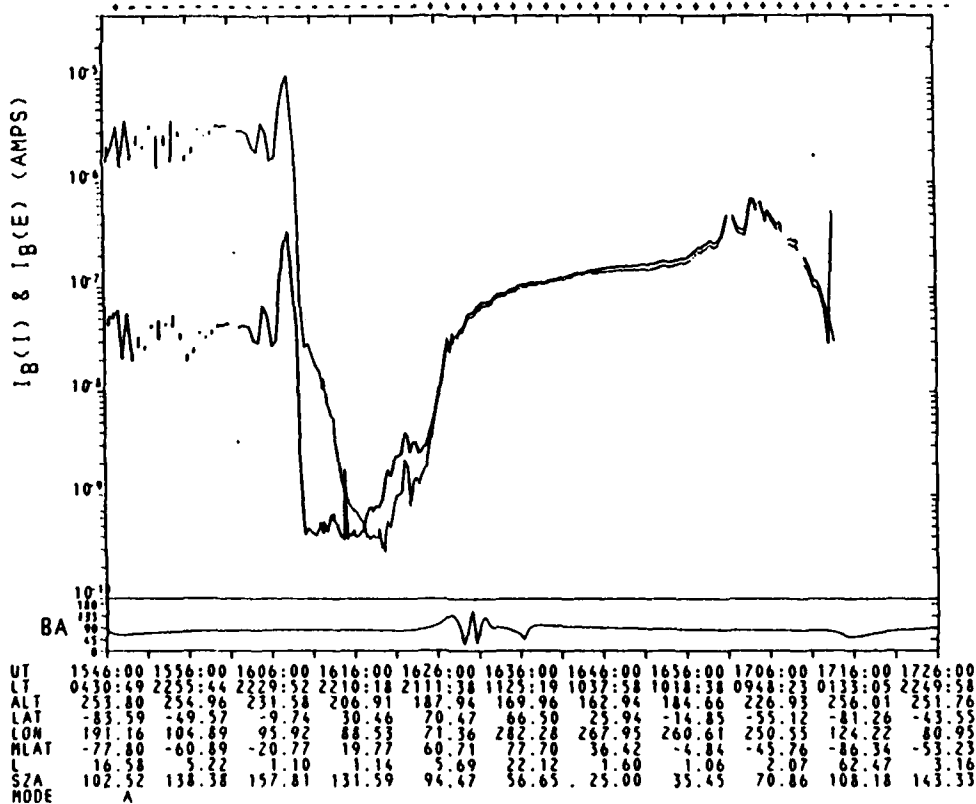
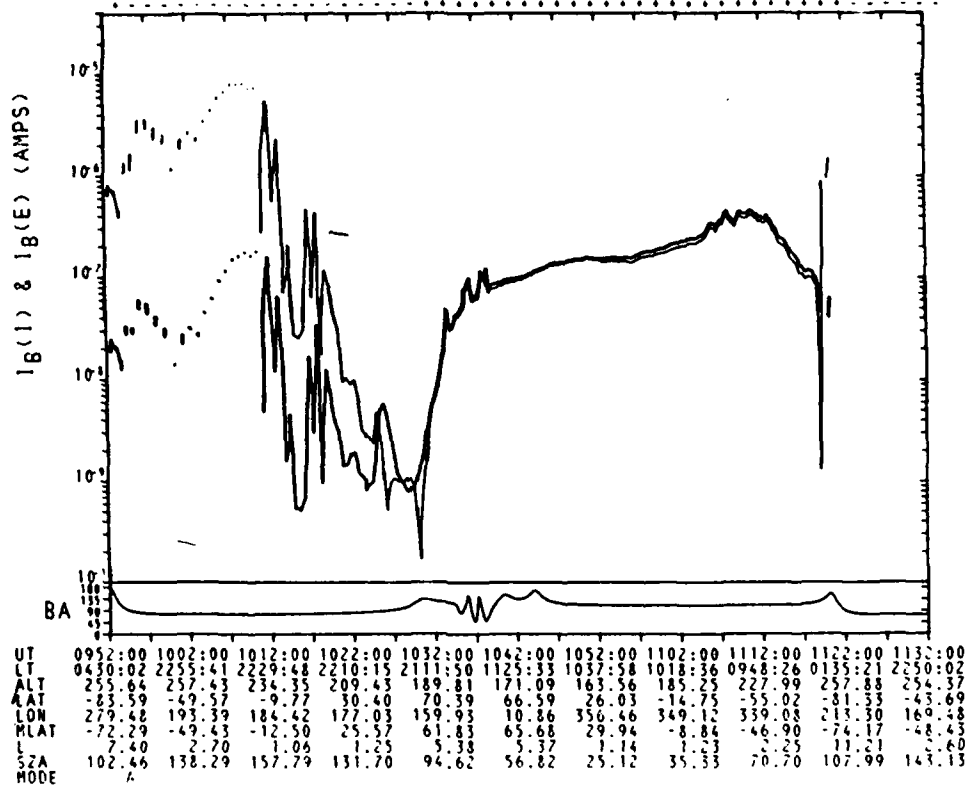
04/16/78

REV 0495

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

UT	0353:00	0408:00	0418:00	0428:00	0438:00	0448:00	0458:00	0508:00	0518:00	0528:00	0538:00
LT	0310:45	2253:16	2228:41	2208:46	2101:15	1119:15	1036:36	1017:23	0944:57	0055:44	2247:58
ALT	254.55	254.79	231.63	207.51	188.17	169.34	162.53	185.47	228.18	256.45	251.50
LAT	-83.24	-47.31	-7.46	32.73	72.62	64.29	23.65	-17.13	-57.36	-79.57	-41.30
LOH	342.17	281.30	272.66	265.17	245.80	97.80	84.63	77.33	66.72	291.92	257.47
MLAT	-74.07	-34.04	3.43	42.94	78.03	53.09	13.27	-26.64	-64.65	-68.29	-31.43
L	7.84	1.52	1.07	1.96	27.74	3.71	1.02	1.27	2.55	5.56	1.44
SZA	104.42	140.09	157.30	129.72	92.50	54.77	24.13	37.13	72.82	110.10	144.91
MODE											

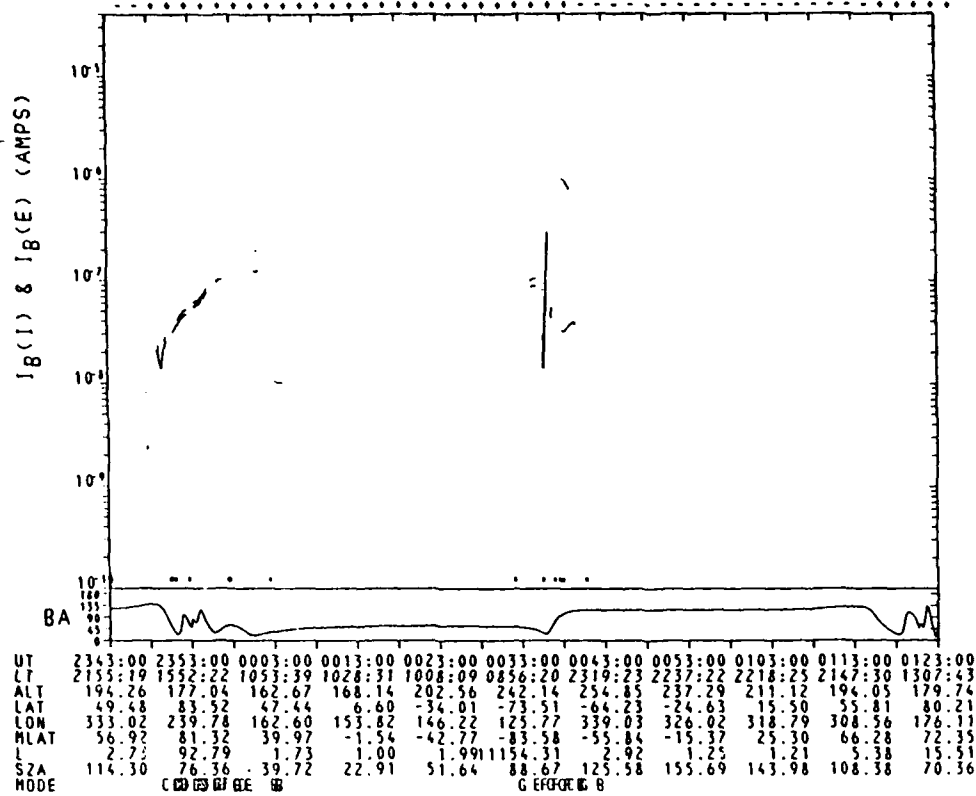


NRL 747

04/16/78

REV 0508

FORMAT C

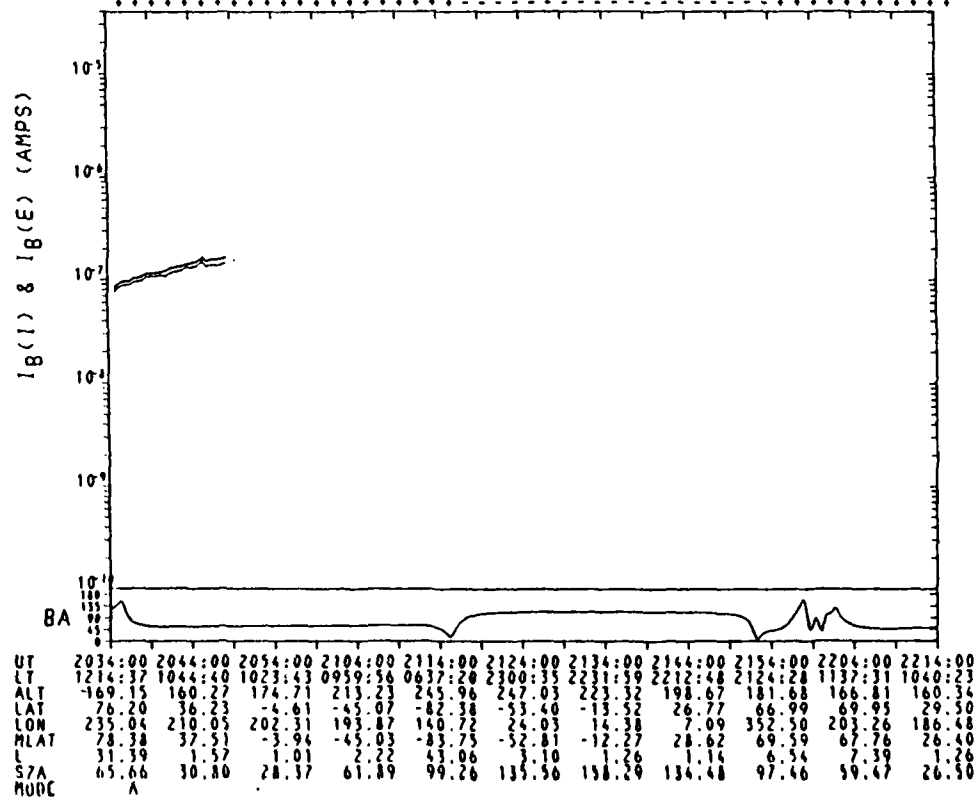


NRL 747

04/17/78

REV 0522

FORMAT A

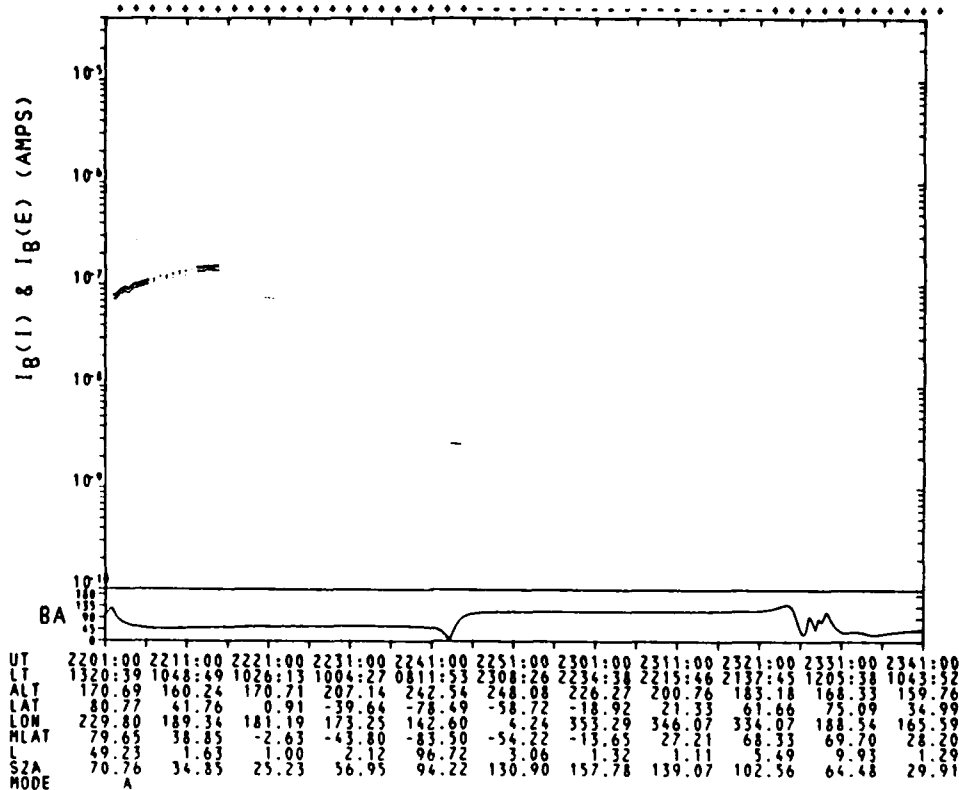


NRL 747

04/17/78

REV 0523

FORMAT A

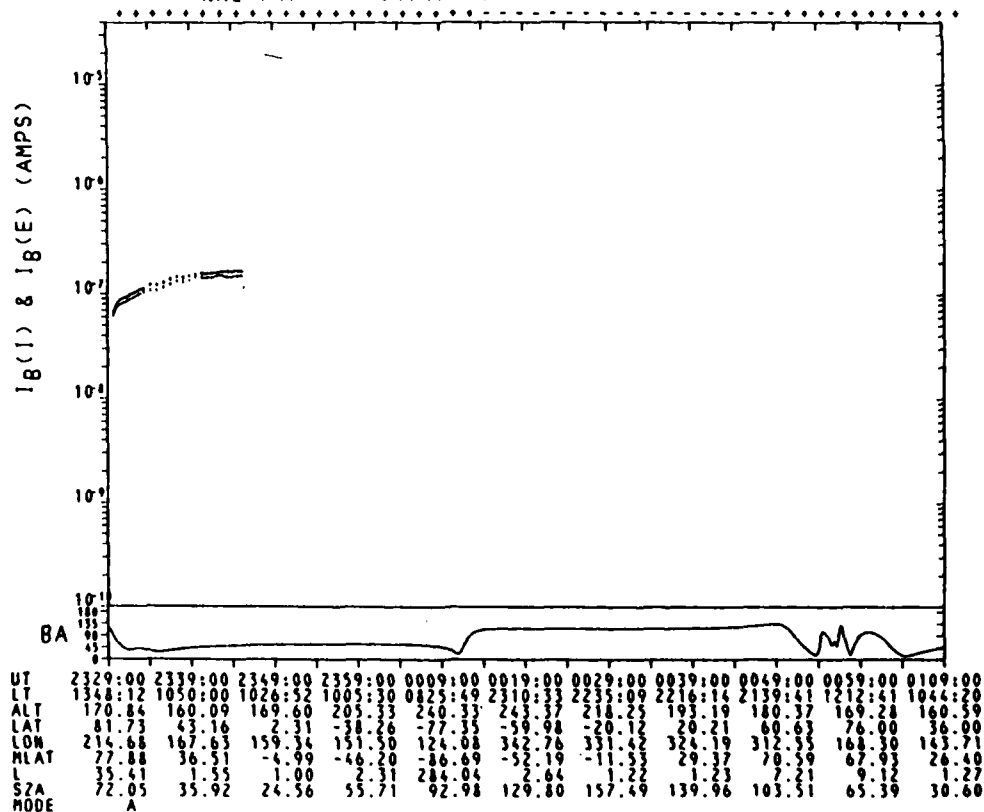


NRL 747

04/17/78

REV 0524

FORMAT A

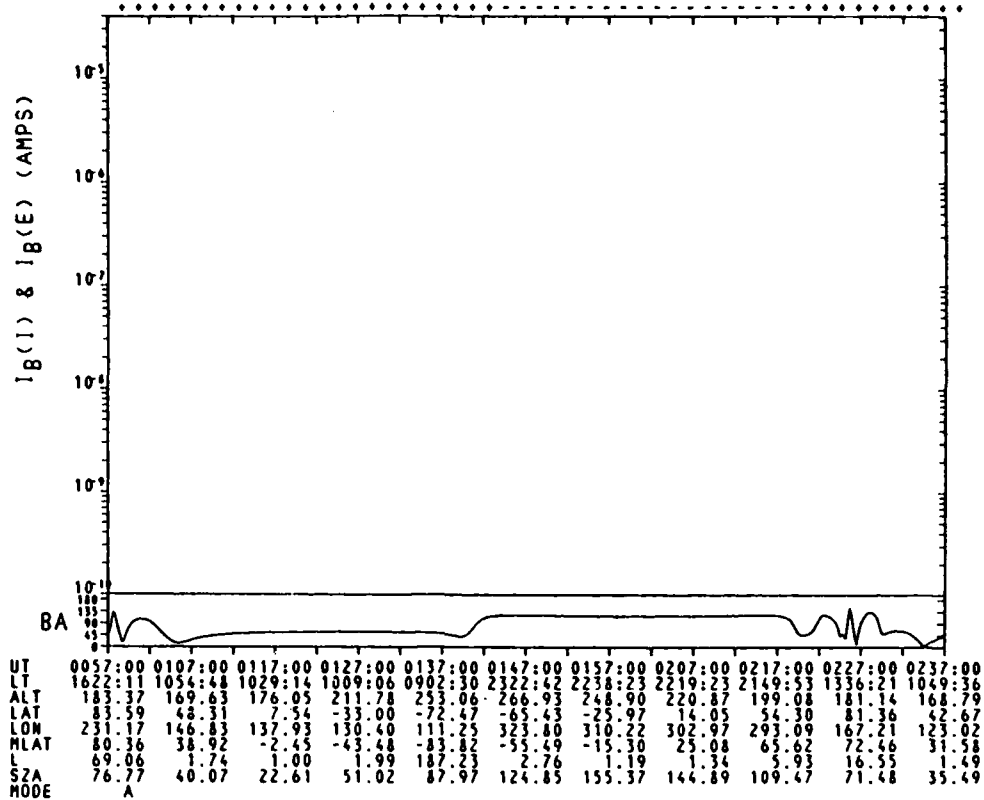


NRL 747

04/18/78

REV 0525

FORMAT A

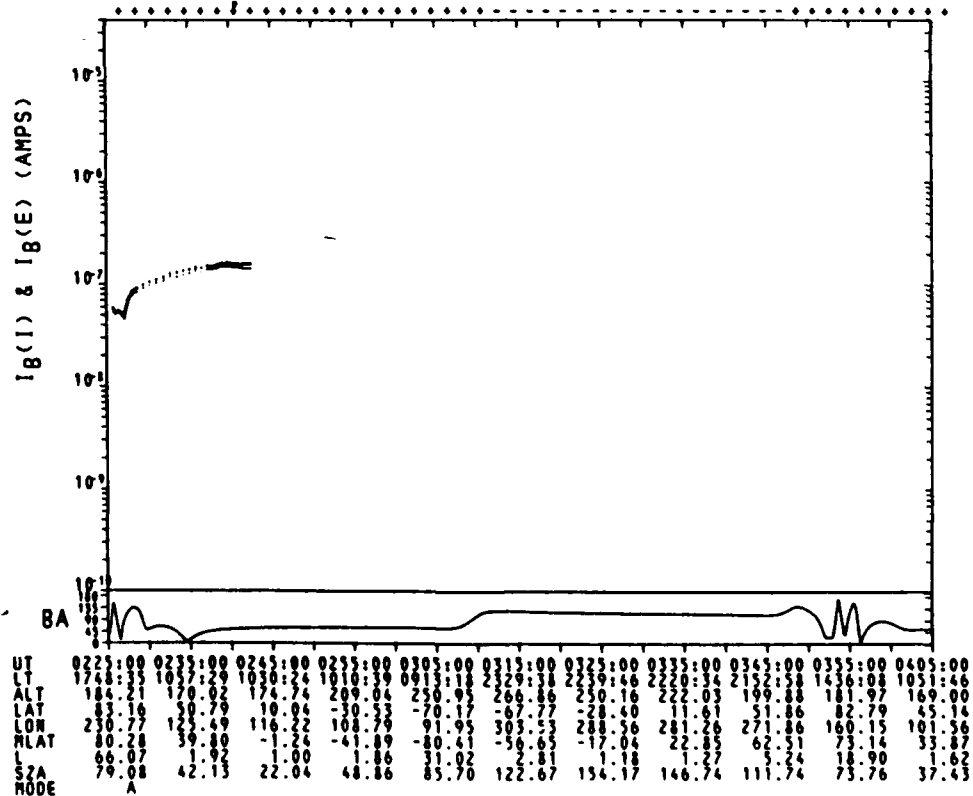


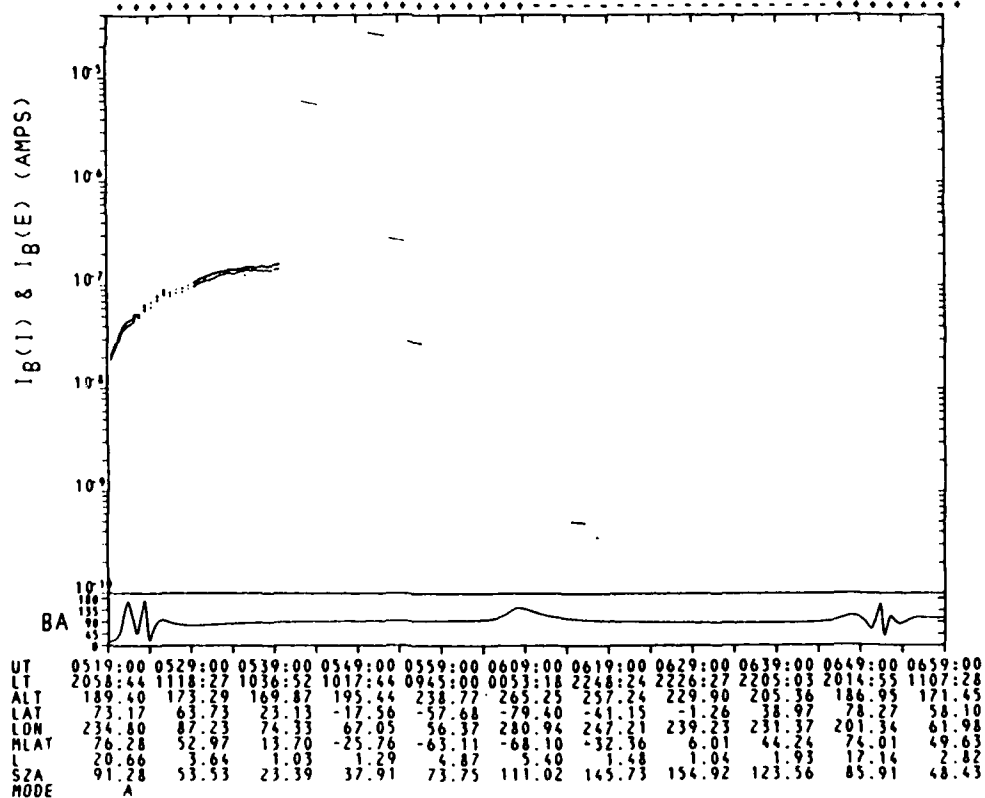
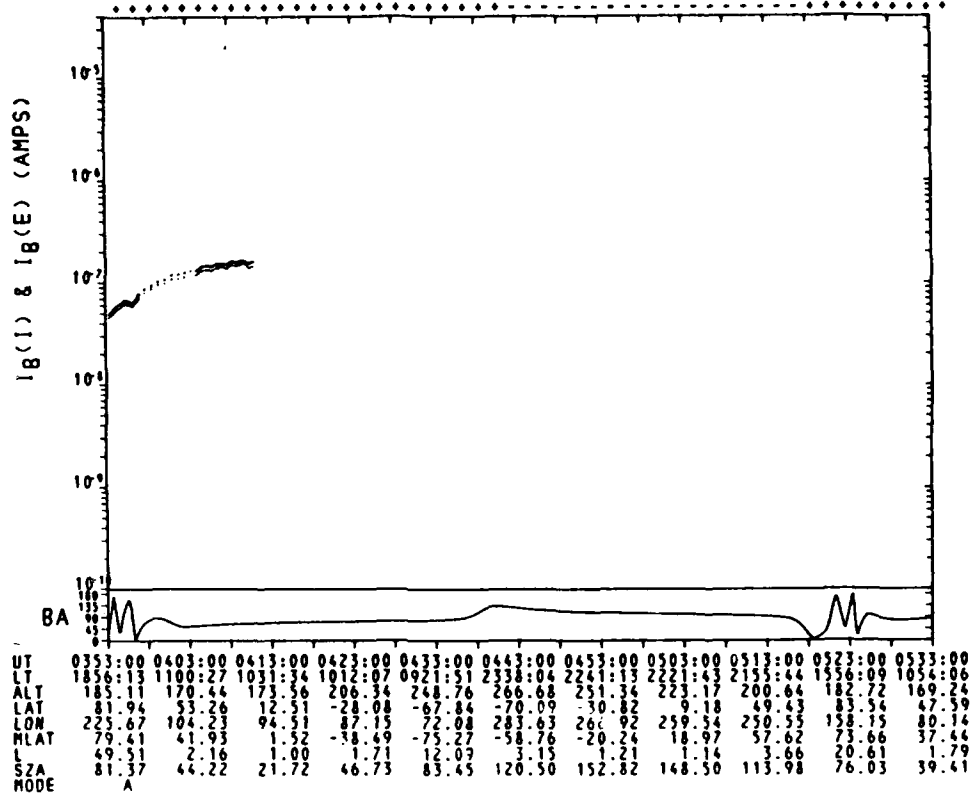
NRL 747

04/18/78

REV 0526

FORMAT A





NRL 747

04/18/78

REV 0529

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS) $10^5$   
 $10^4$   
 $10^3$   
 $10^2$   
 $10^1$   
 $10^0$ 

BA

UT	0648:00	0658:00	0708:00	0718:00	0728:00	0738:00	0748:00	0758:00	0808:00	0818:00	0828:00
LT	2049:08	1114:54	1036:01	1016:56	0942:22	0034:20	2247:11	2225:44	2203:48	1954:27	1104:55
ALT	188.47	172.52	170.22	196.99	240.24	265.31	255.89	228.22	203.93	185.85	170.79
LAT	74.68	62.12	21.49	-19.19	-59.26	-78.07	-39.55	0.37	40.61	79.63	56.46
LOW	210.15	64.09	51.87	44.59	33.45	253.95	224.65	216.79	208.81	173.97	39.09
MLAT	72.80	53.30	15.11	-23.68	-60.13	-67.83	-34.01	3.74	41.50	71.66	51.30
L	13.27	3.44	1.05	1.35	4.03	5.77	1.57	1.02	1.76	14.18	2.71
SZA	89.73	52.04	22.82	39.24	75.27	112.52	146.96	154.07	122.06	84.34	46.95
MODE	A										

NRL 747

04/18/78

REV 0530

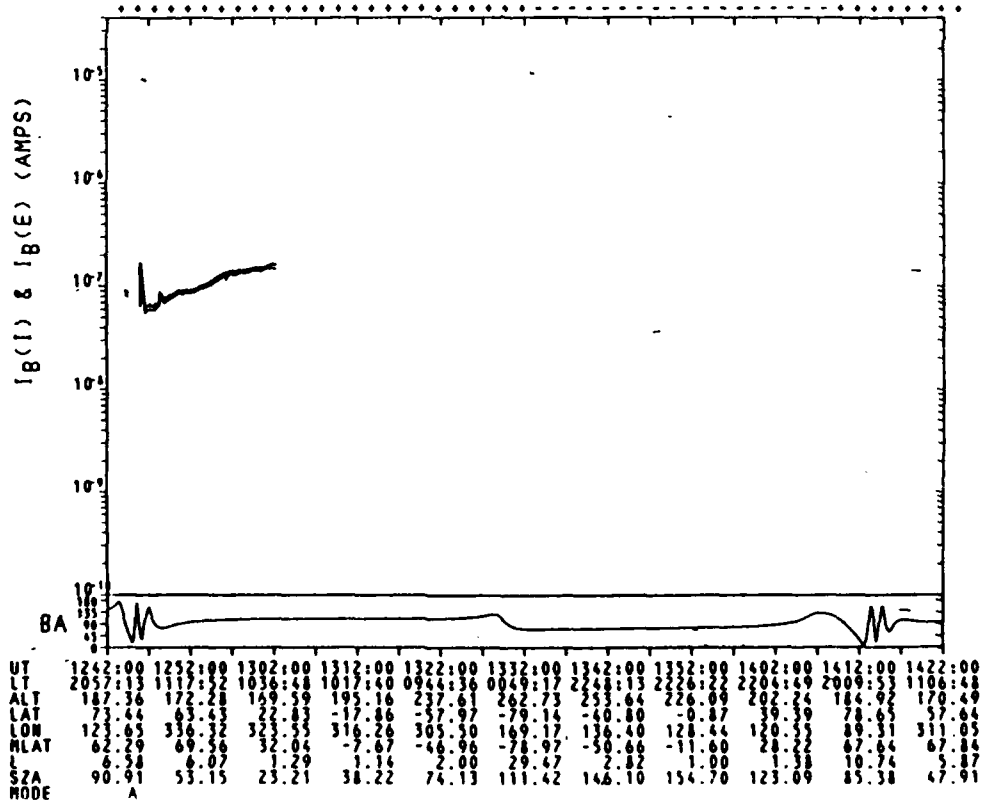
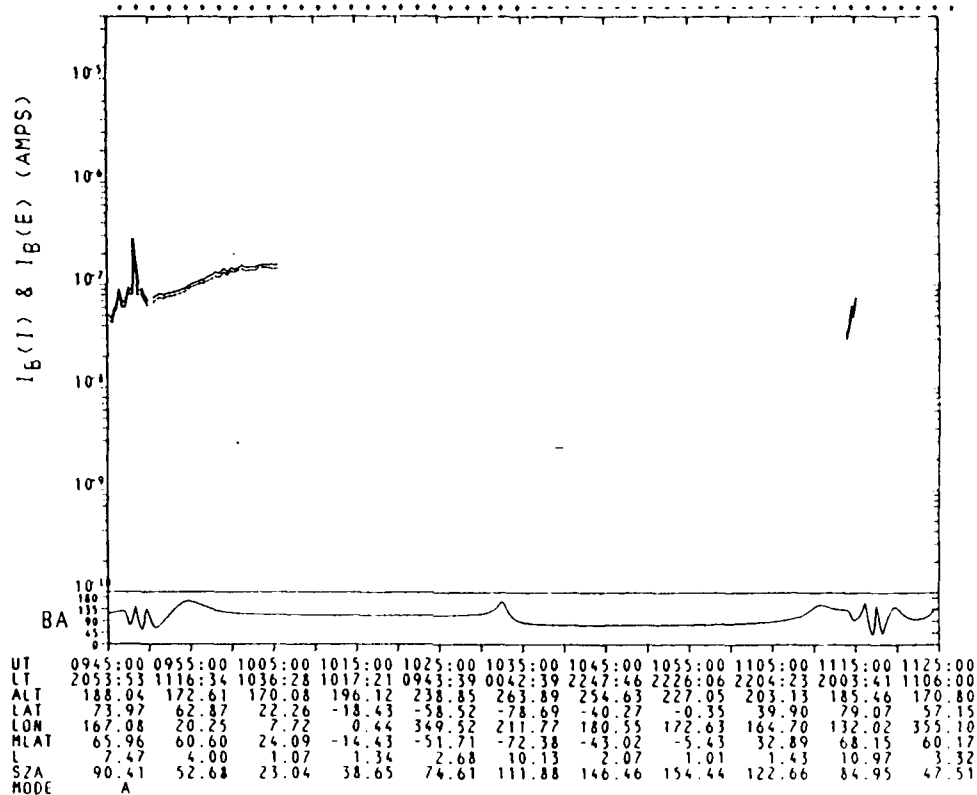
FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS) $10^5$   
 $10^4$   
 $10^3$   
 $10^2$   
 $10^1$   
 $10^0$ 

BA

UT	0816:00	0826:00	0836:00	0846:00	0856:00	0906:00	0916:00	0926:00	0936:00	0946:00	0956:00
LT	2103:00	1120:27	1037:21	1018:10	0946:17	0104:44	2249:05	2226:50	2205:39	2022:52	1104:47
ALT	189.10	173.50	169.86	194.72	237.54	264.05	256.26	228.99	204.56	186.66	171.54
LAT	72.40	64.53	23.96	-16.74	-56.87	-80.03	-41.94	-2.04	38.20	77.62	58.86
LOW	191.61	43.47	30.20	-22.90	12.43	239.54	203.13	195.07	187.27	159.07	18.05
MLAT	67.89	58.27	21.37	-17.09	-53.90	-70.67	-40.21	-2.85	35.01	68.48	57.30
L	7.94	4.09	1.09	1.32	3.12	7.47	1.88	1.01	1.50	10.22	3.22
SZA	92.01	5.23	23.68	37.27	73.03	110.31	145.17	155.29	124.23	86.59	49.06
MODE	A										



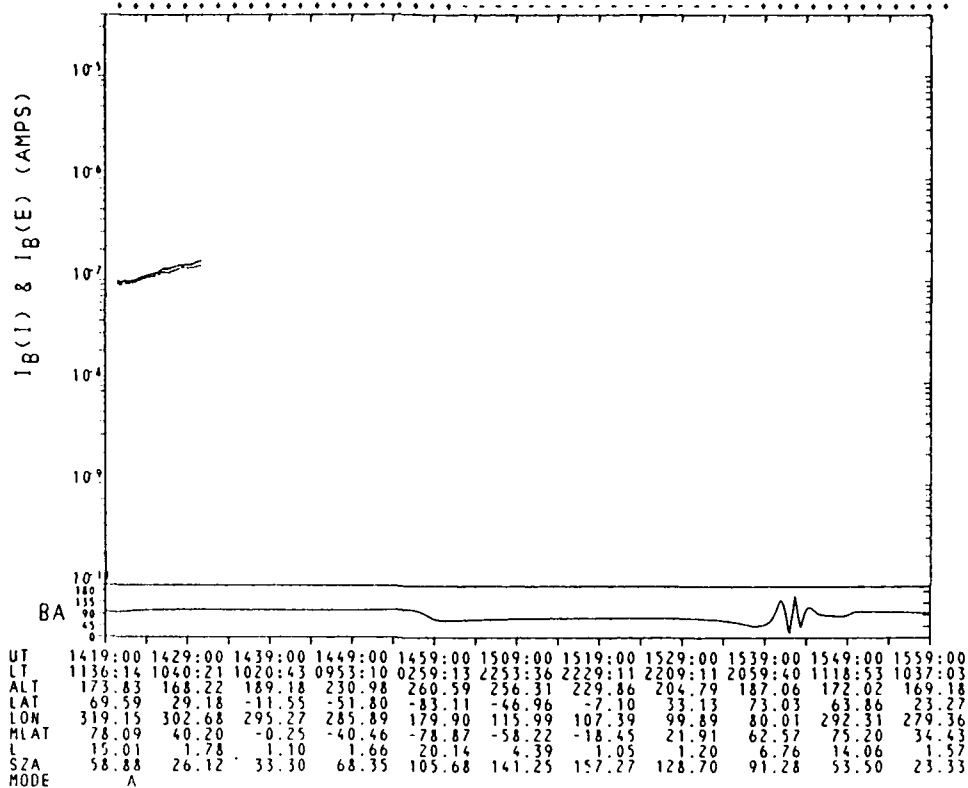


NRL 747

04/18/78

REV 0534

FORMAT A

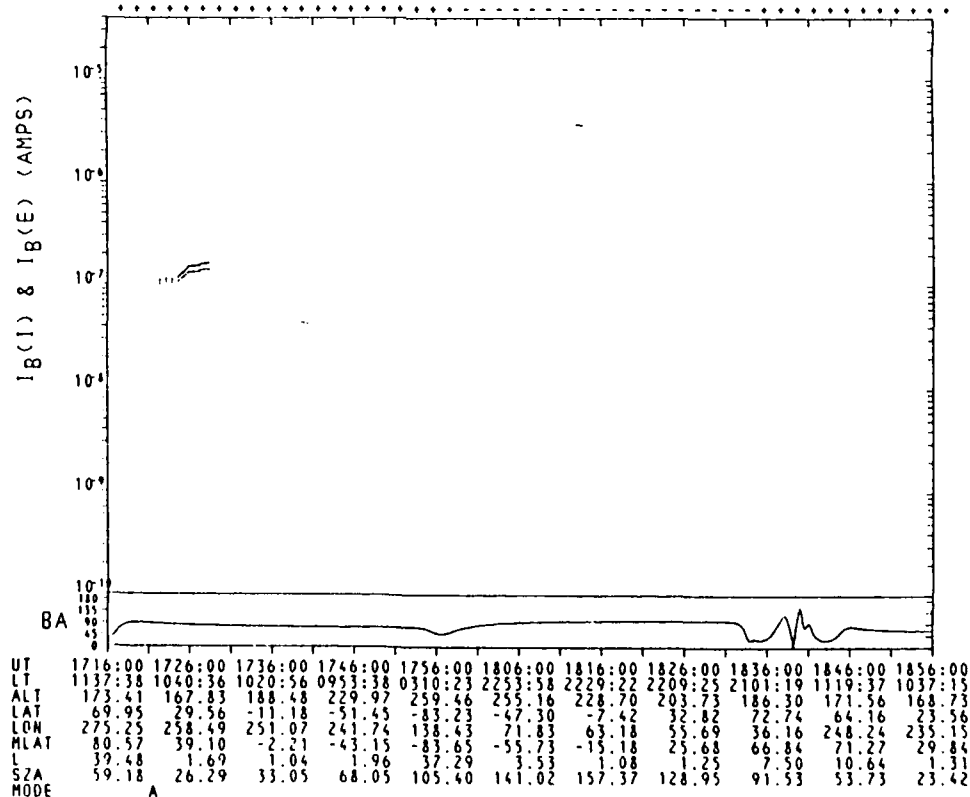


NRL 747

04/18/78

REV 0536

FORMAT A

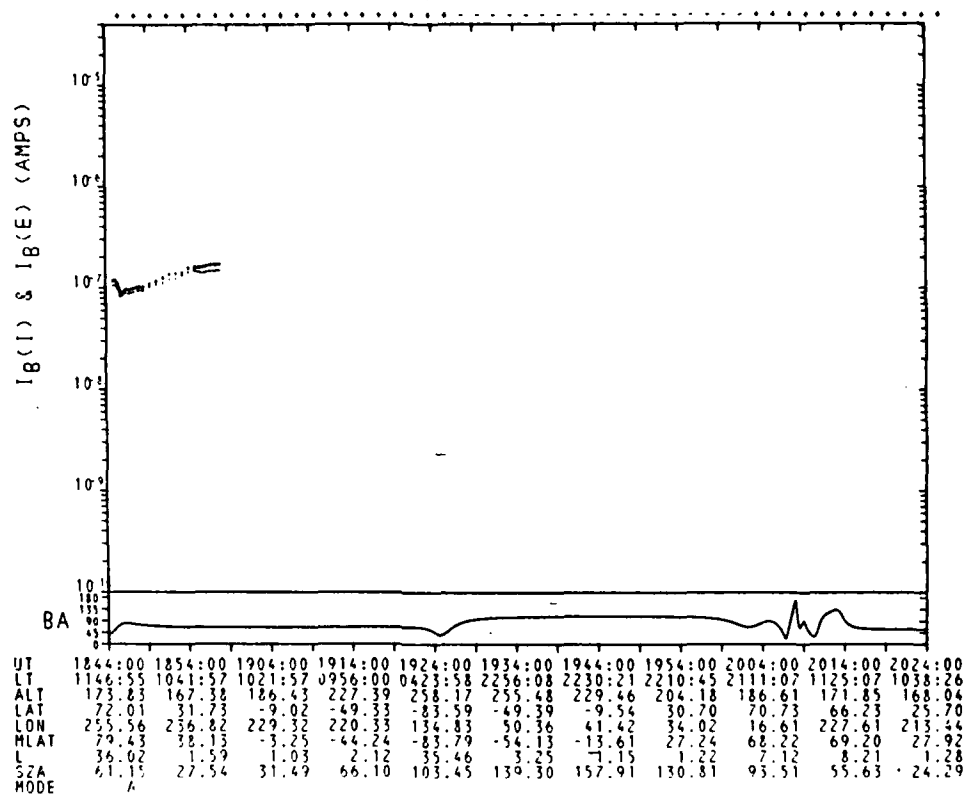


NRL 747

04/18/73

REV 0537

FORMAT A

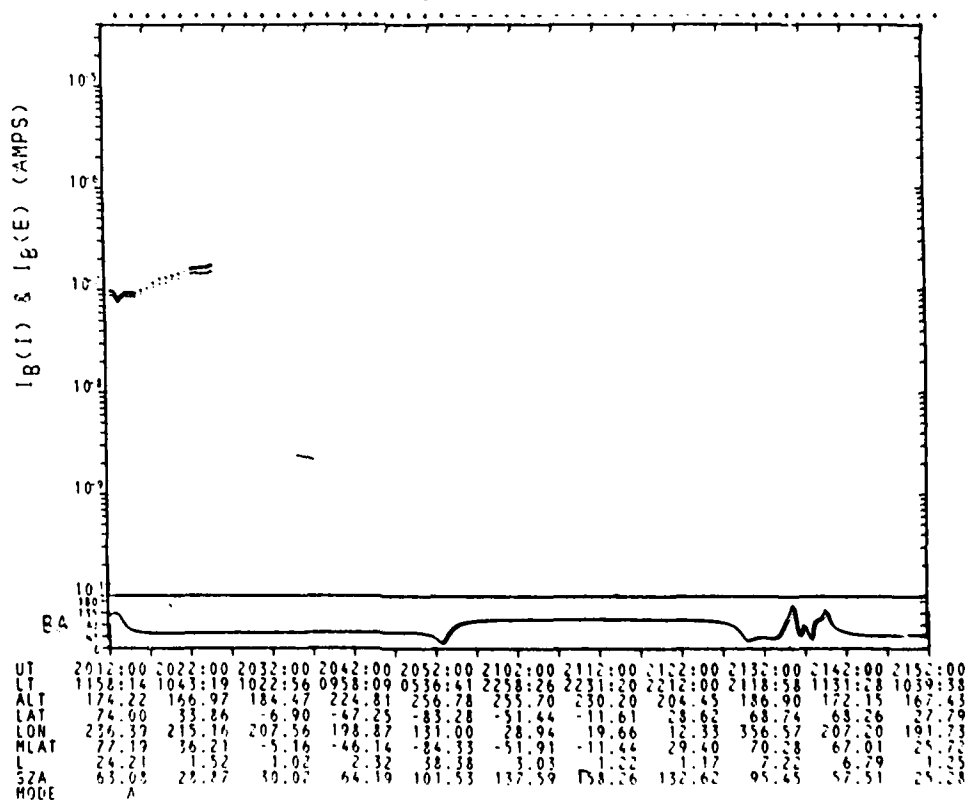


NRL 747

04/18/73

REV 0538

FORMAT A

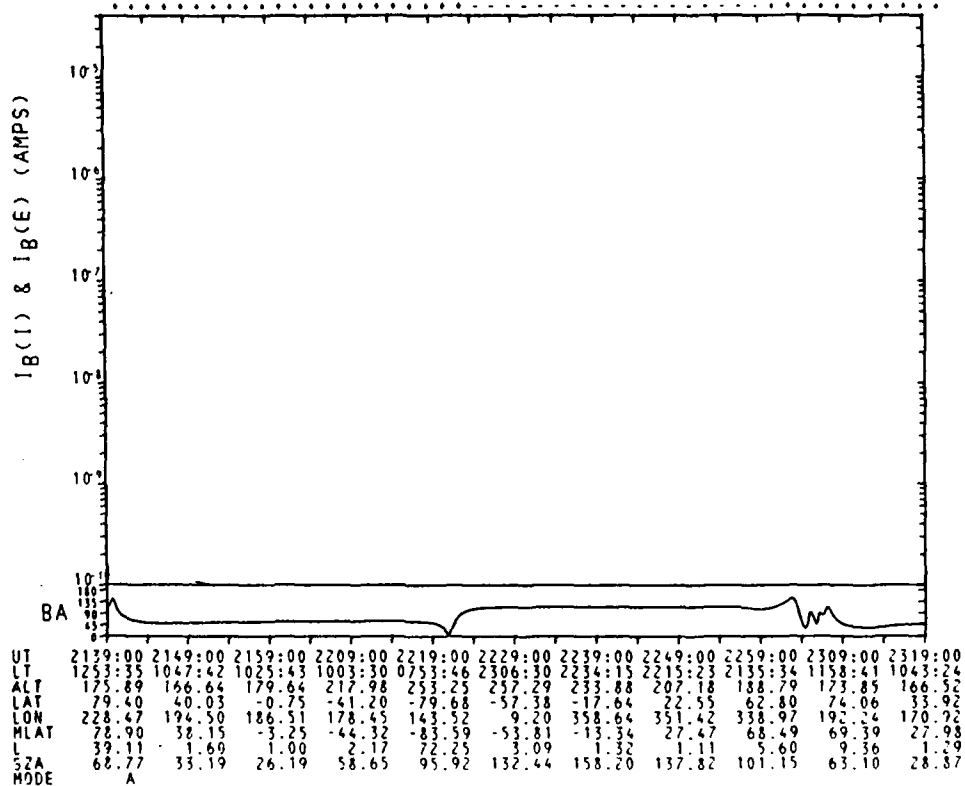


NRL 747

04/18/73

REV 0539

FORMAT A

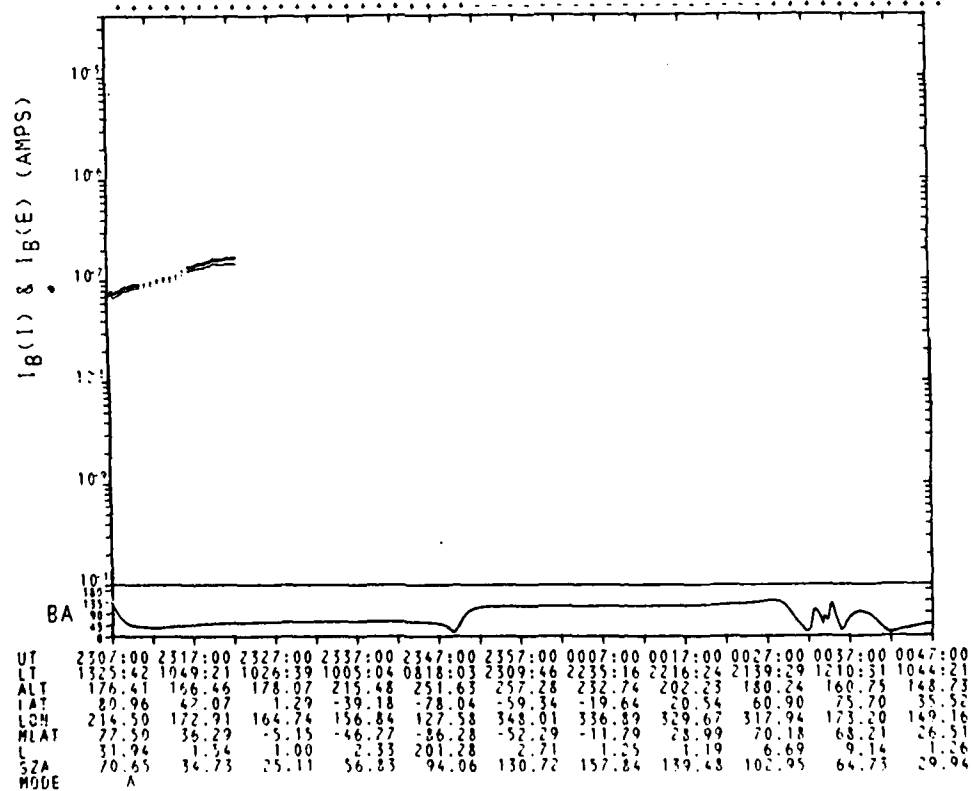


NRL 747

04/18/73

REV 0540

FORMAT A

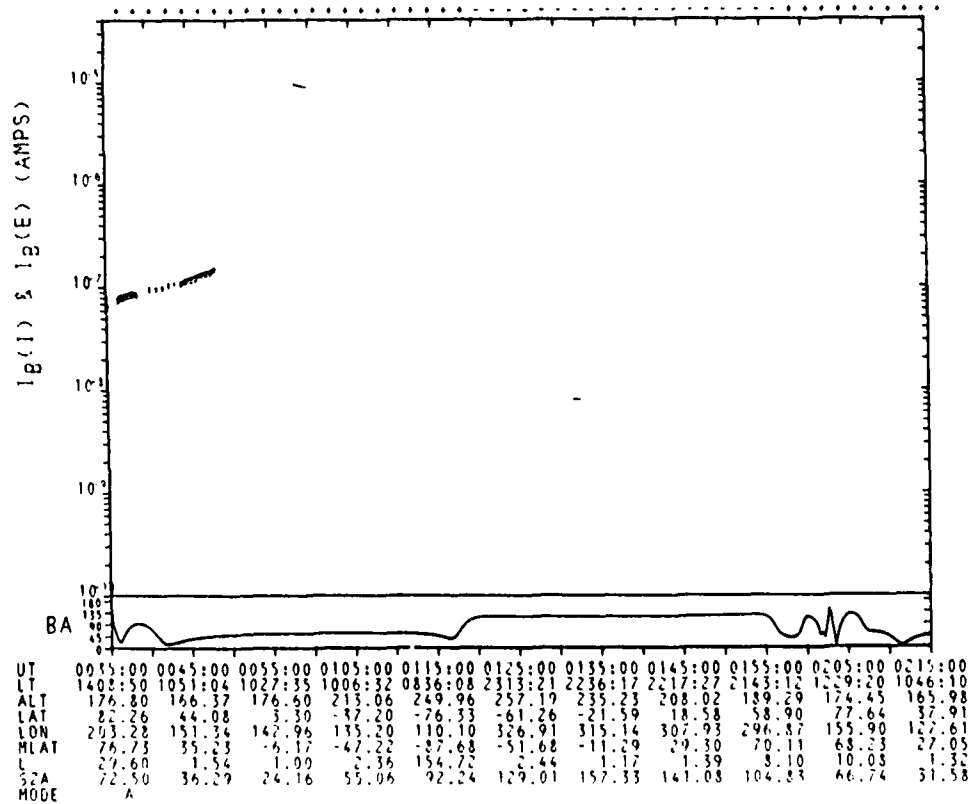


NRL 747

04/19/78

REV 0541

FORMAT A

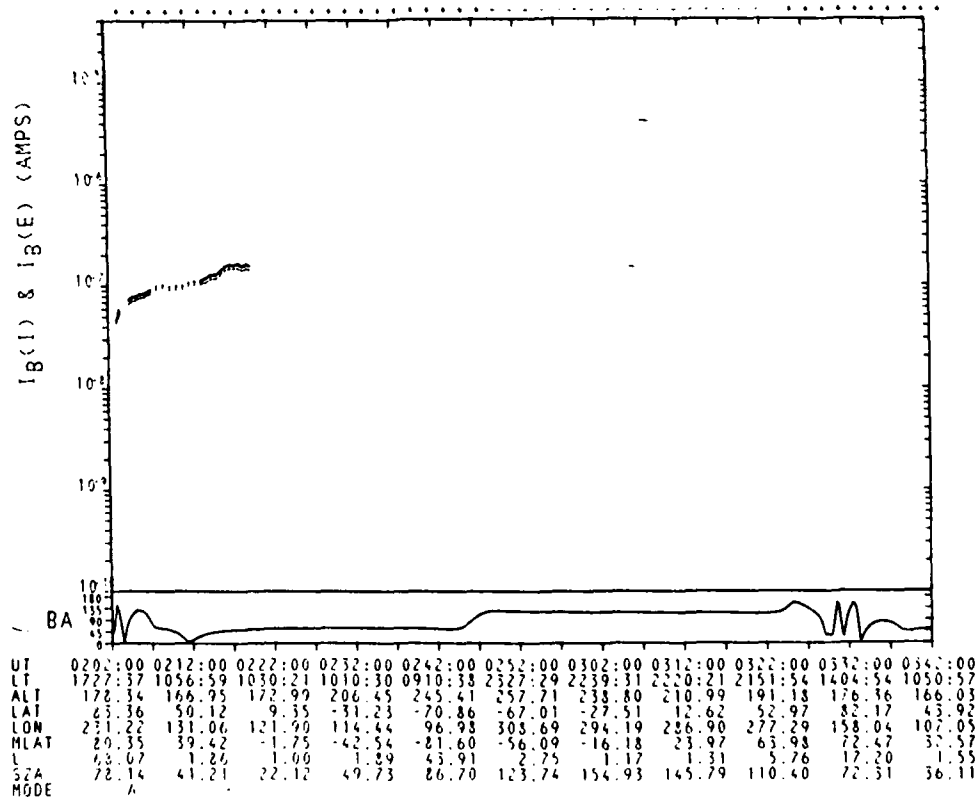


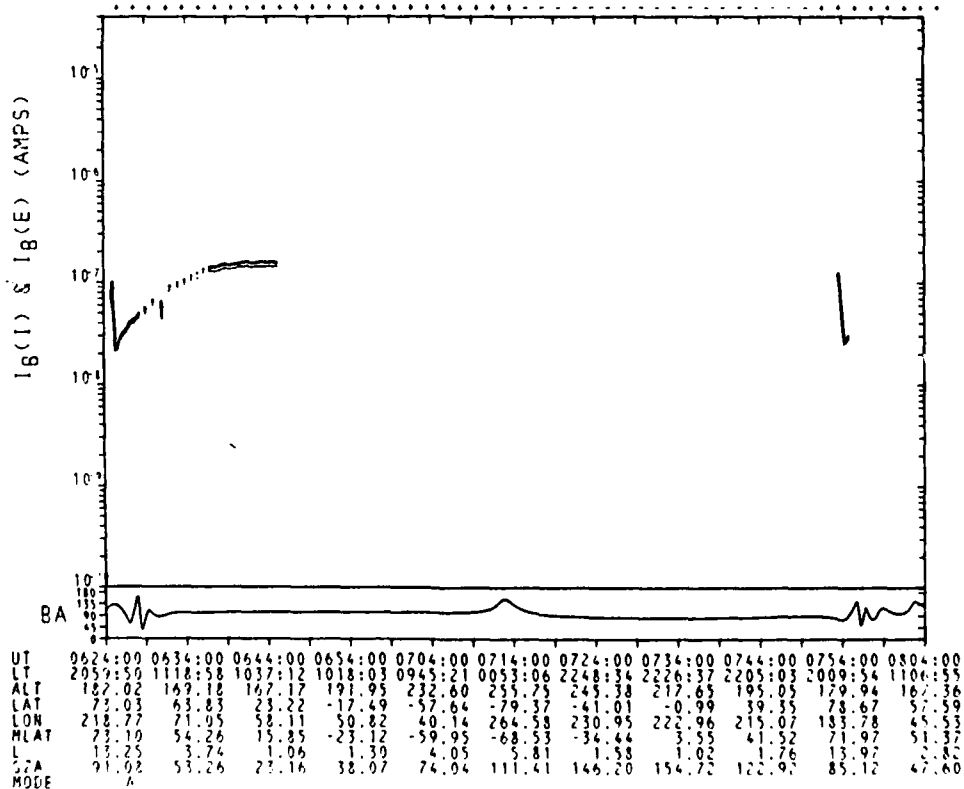
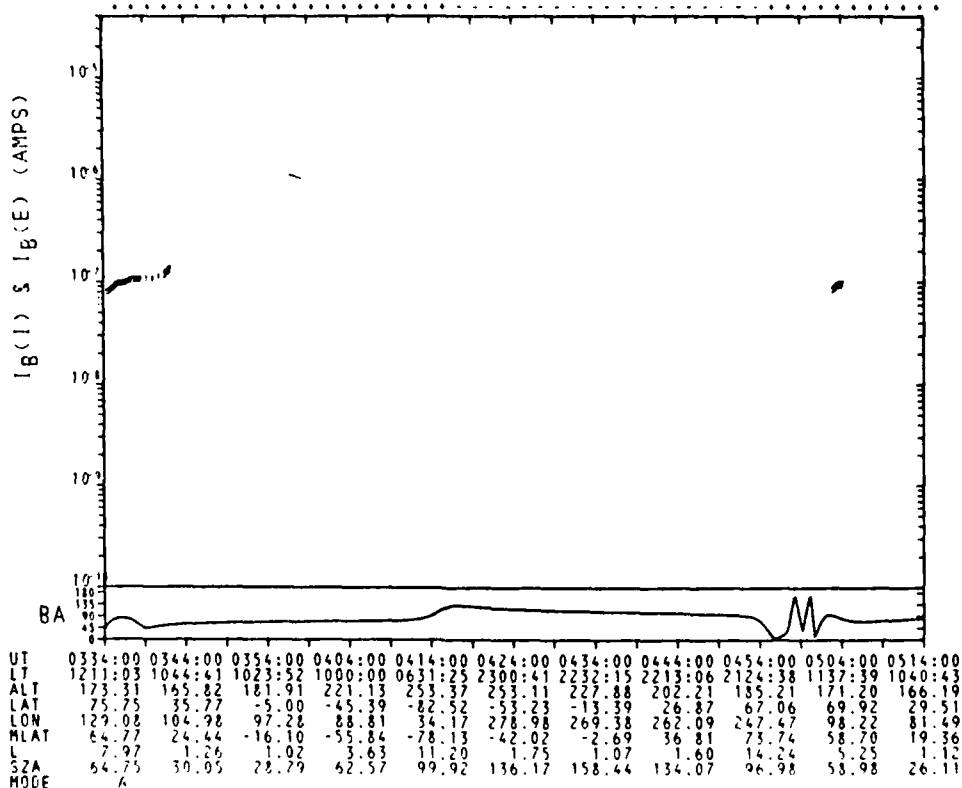
NRL 747

04/19/78

REV 0542

FORMAT A



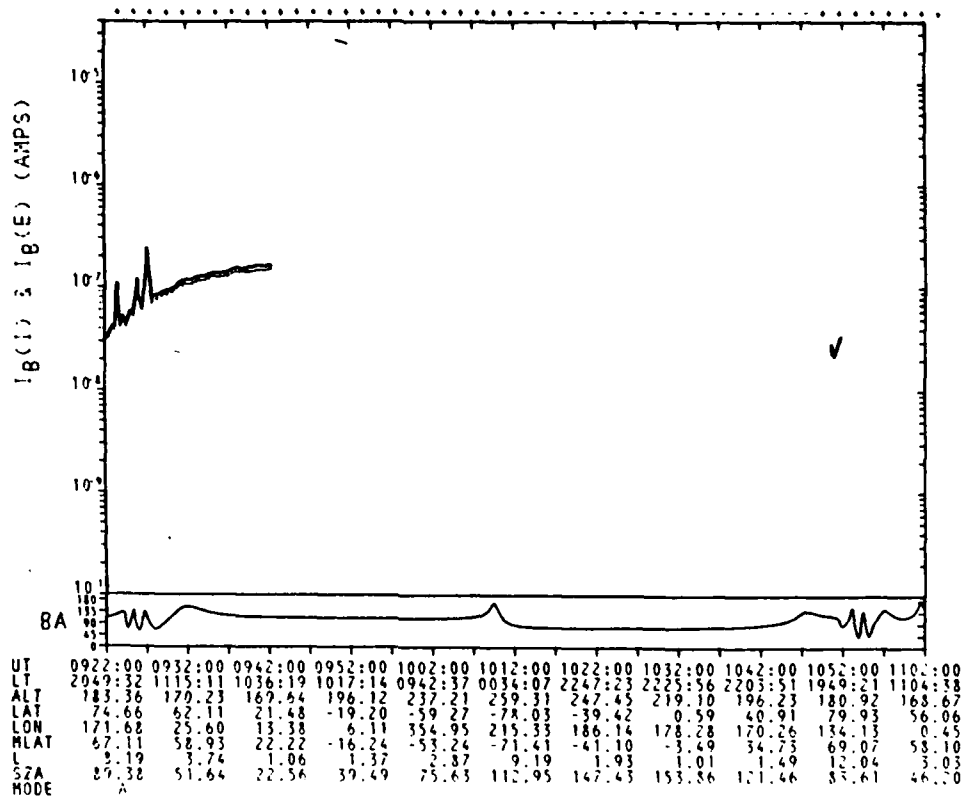


NRL 747

04/19/78

REV 0547

FORMAT A

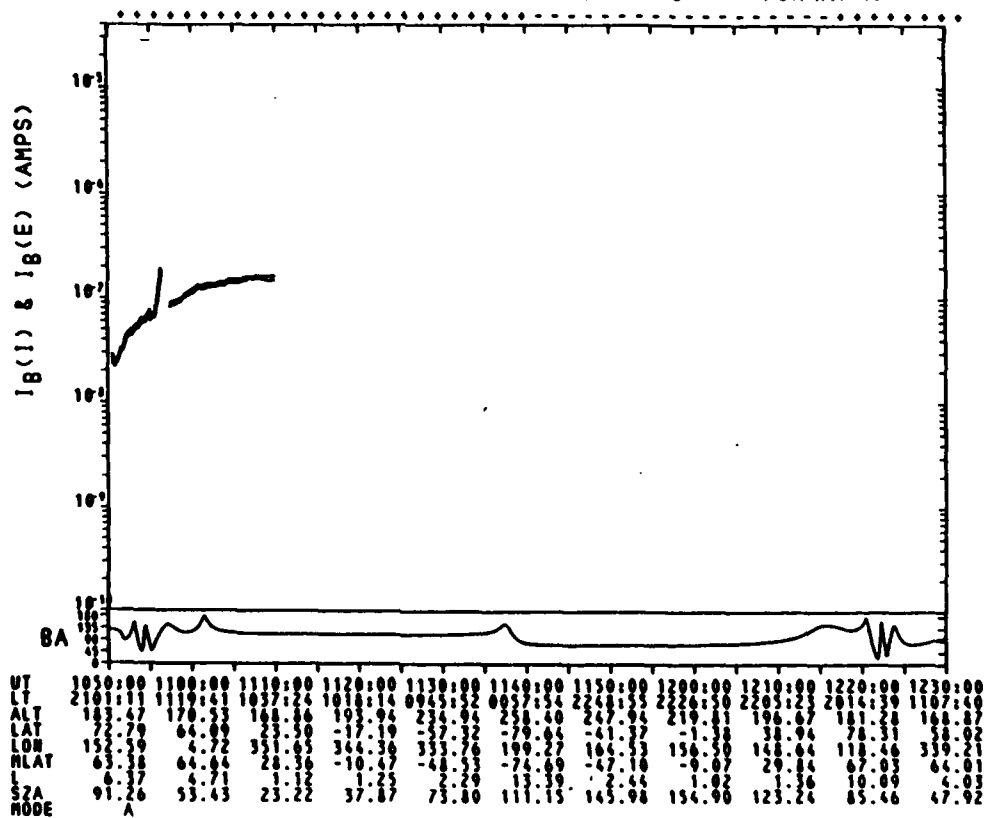


NRL 747

04/19/78

REV 0548

FORMAT A

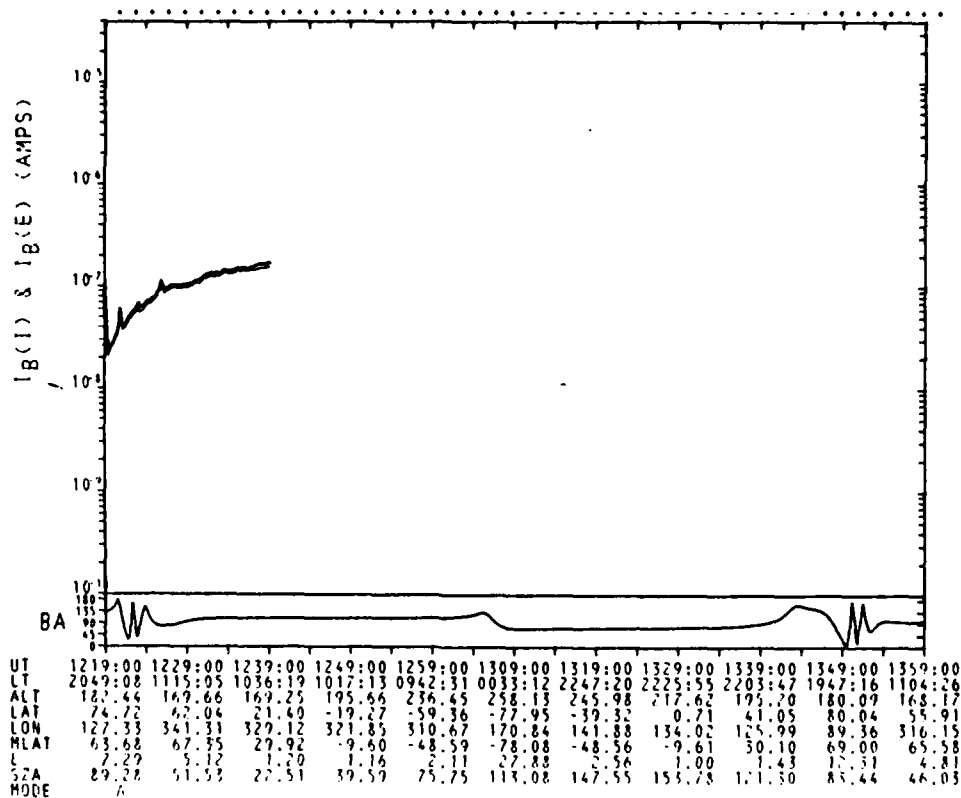


NRL 747

04/19/78

REV 0549

FORMAT A

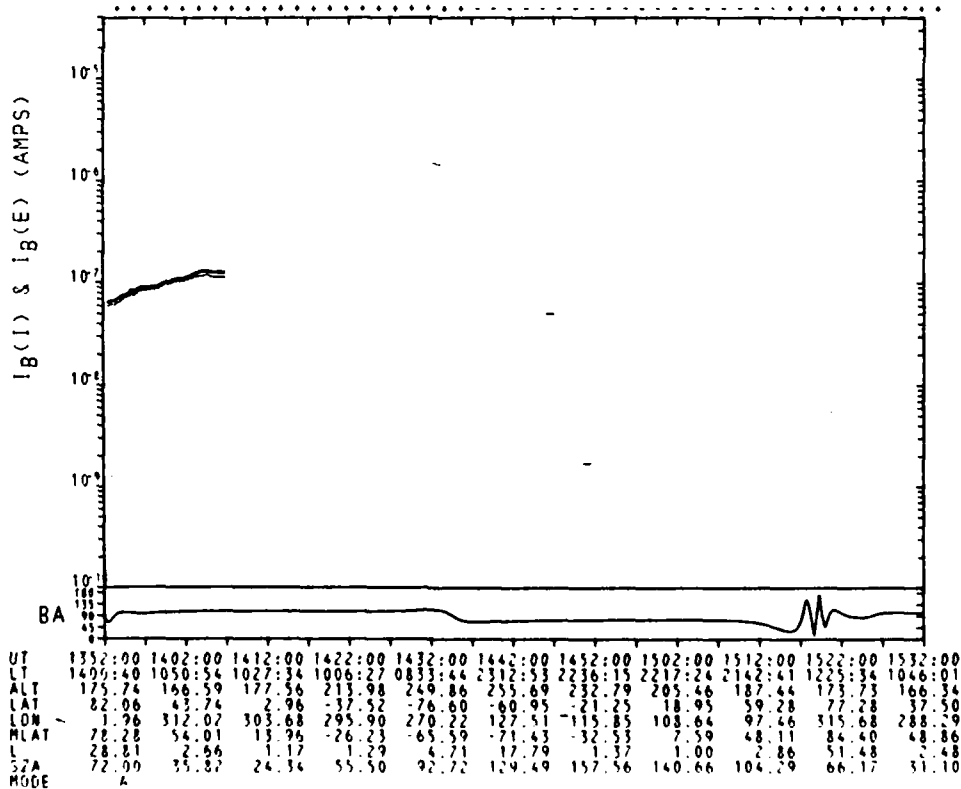


NRL 747

04/19/78

REV 0550

FORMAT A



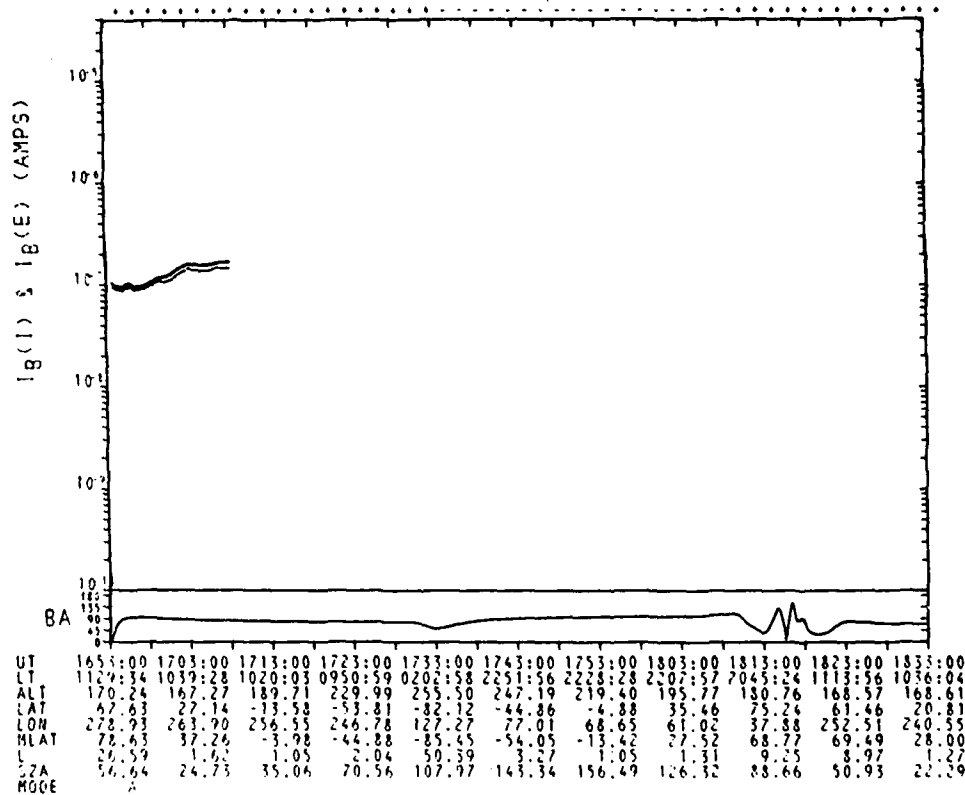


NRL 747

04/19/73

REV 0552

FORMAT A

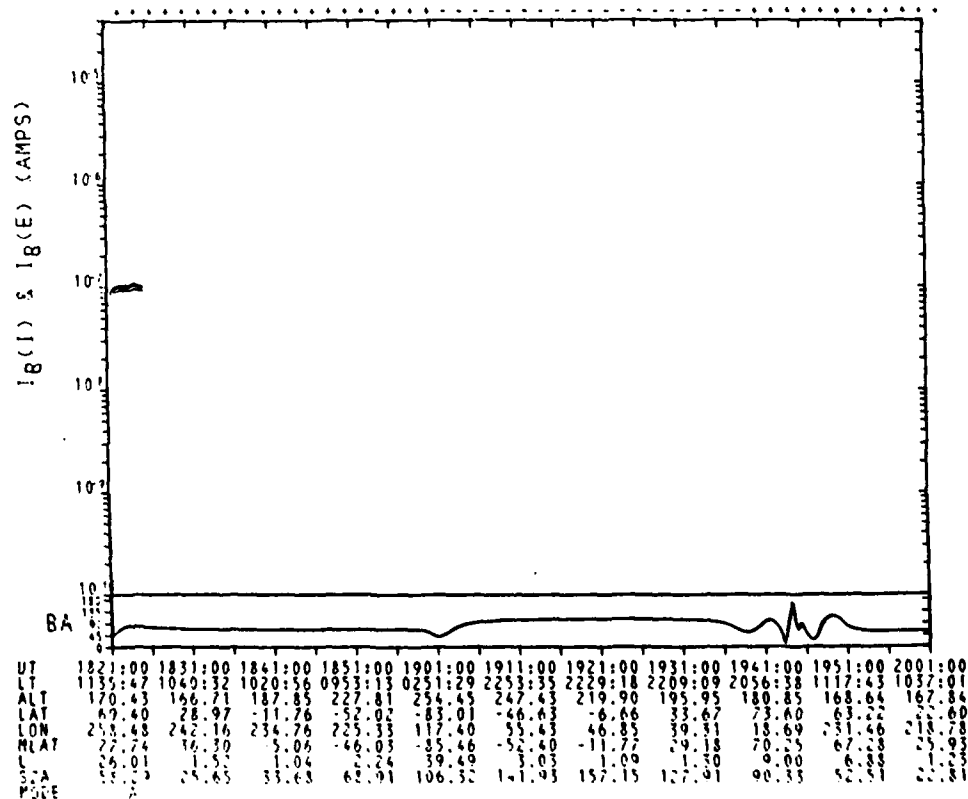


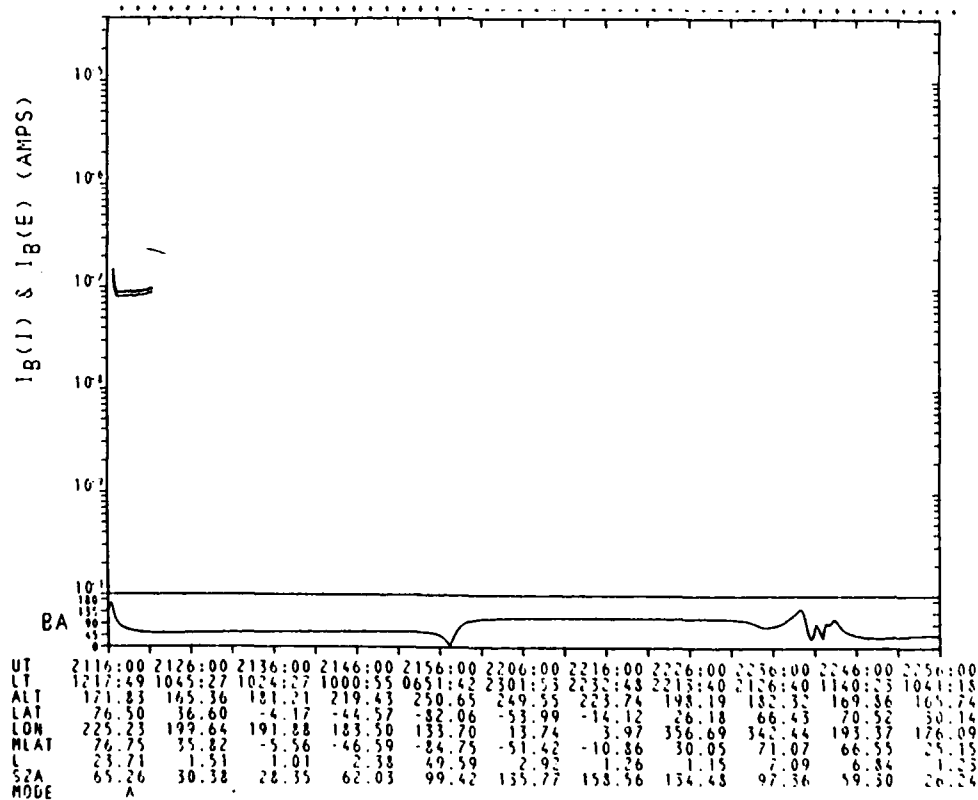
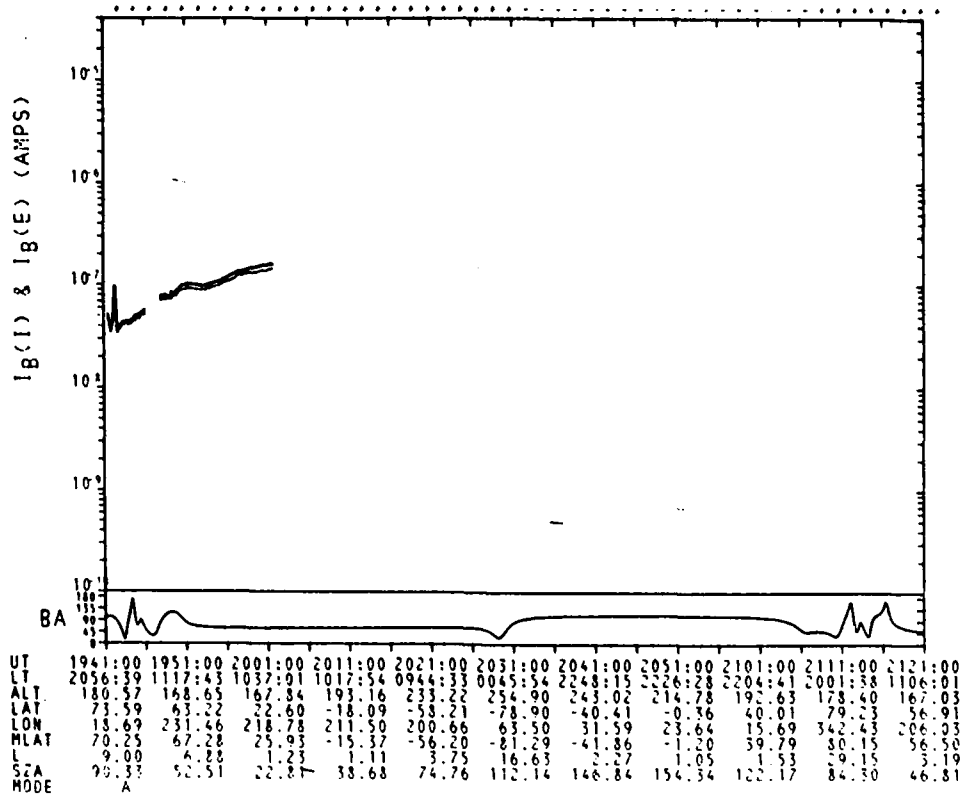
NRL 747

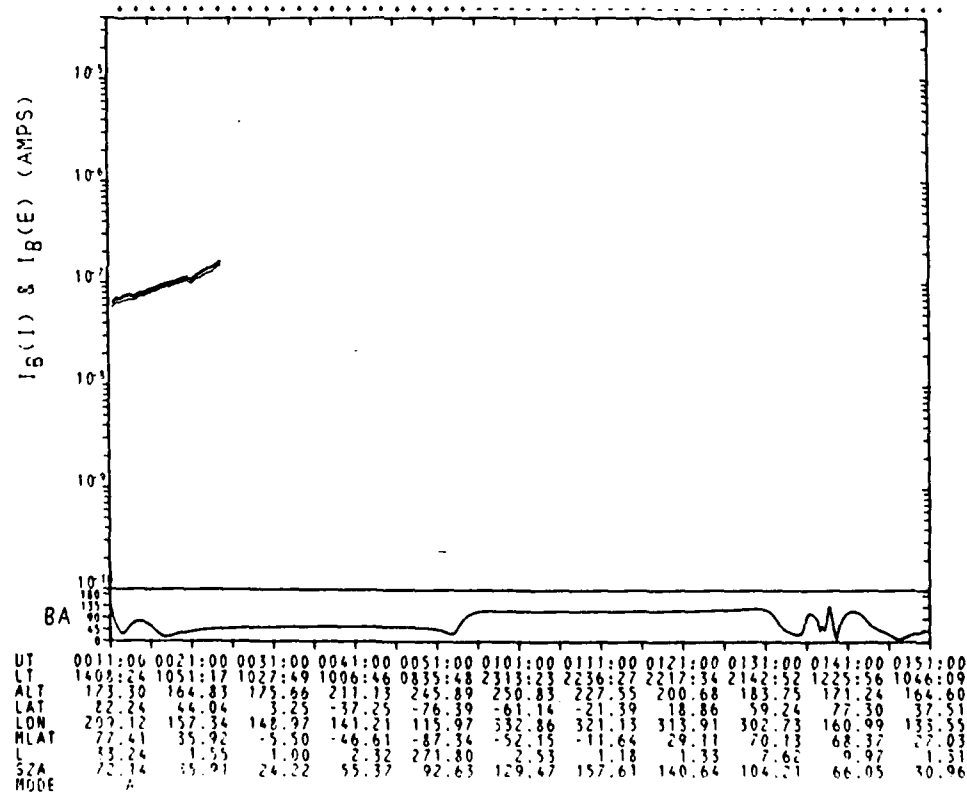
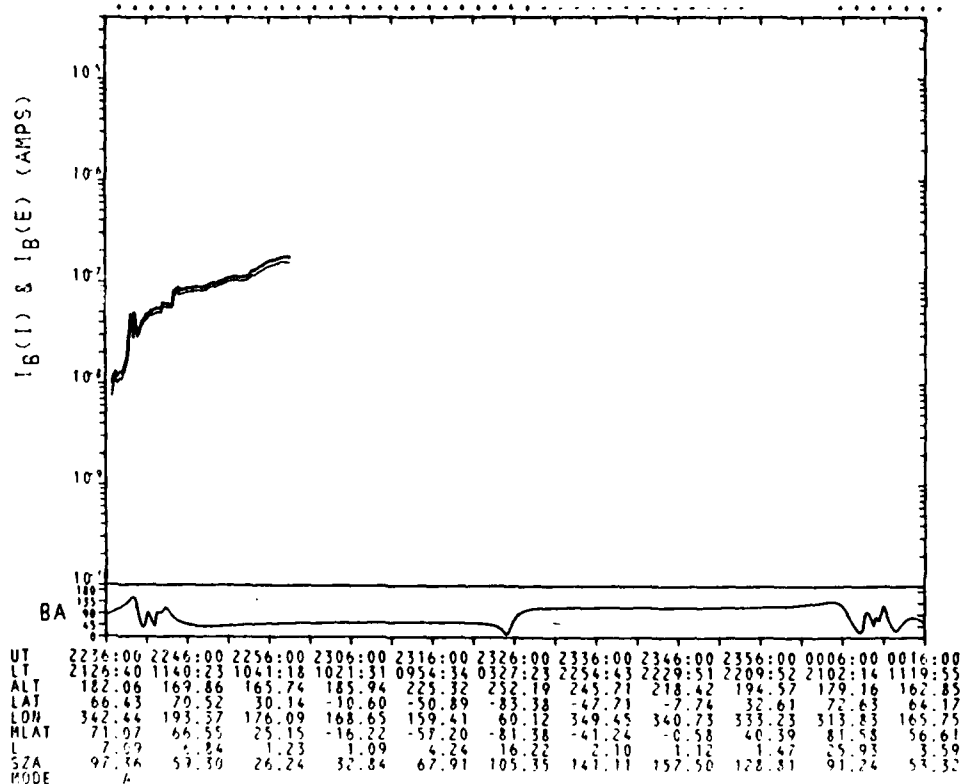
04/19/73

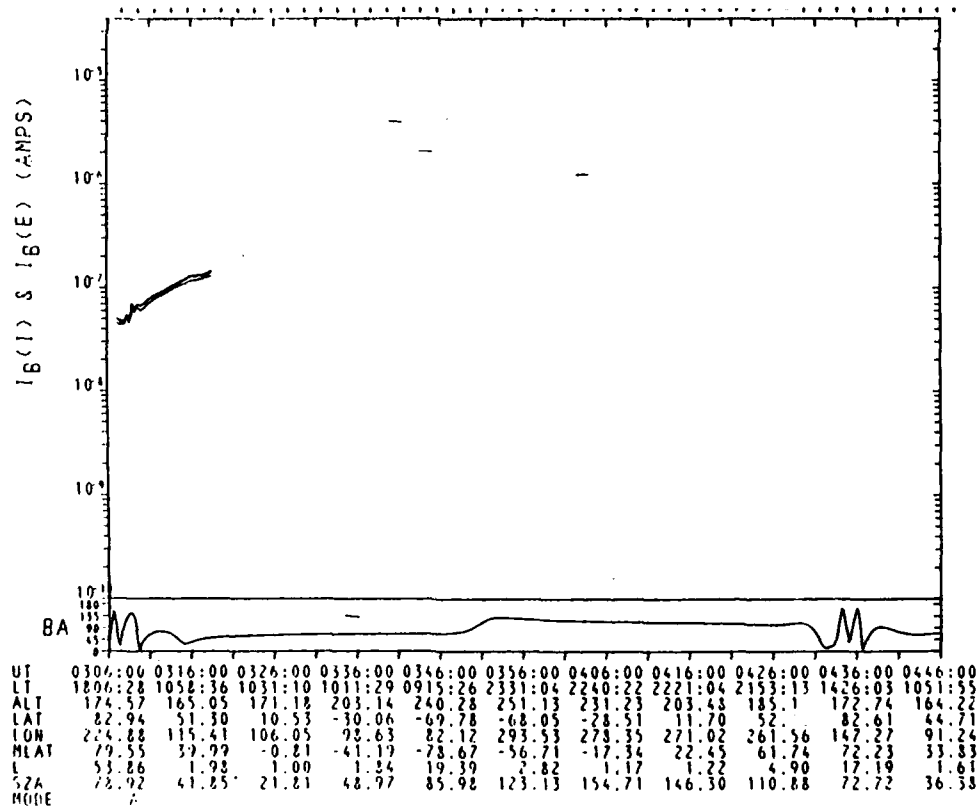
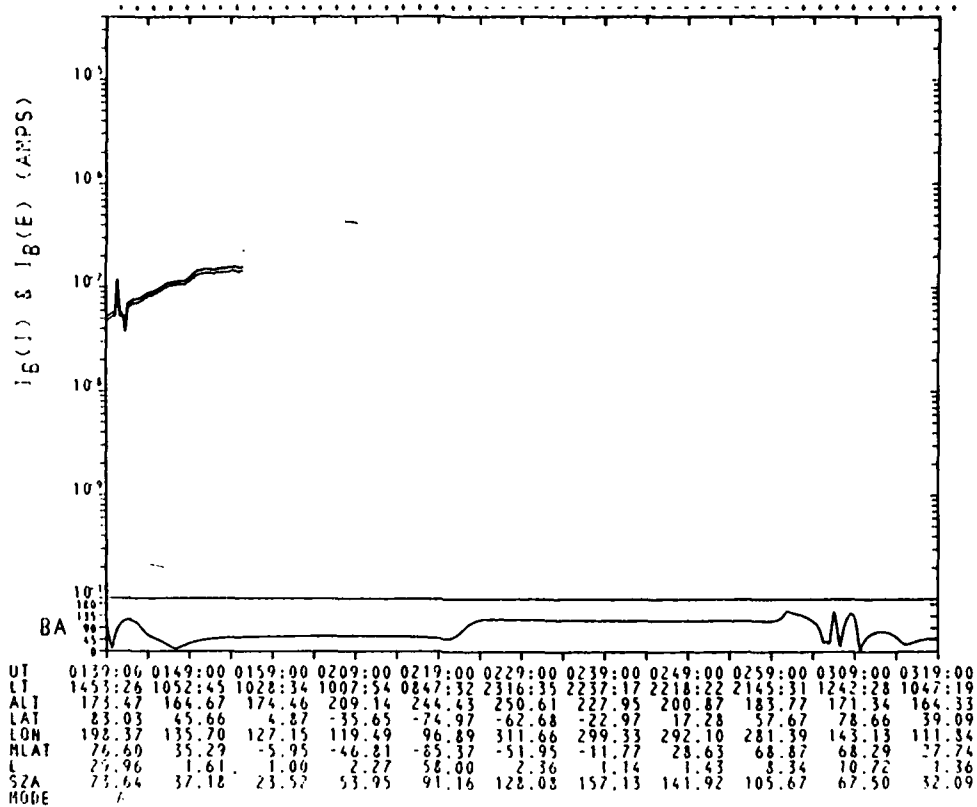
REV 0553

FORMAT A









NRL 747

04/20/78

REV 0561

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

UT	0600:00	0610:00	0620:00	0630:00	0640:00	0650:00	0700:00	0710:00	0720:00	0730:00	0740:00
LT	2051:52	1115:59	1036:41	1017:33	0943:13	0035:12	2247:37	2226:08	2203:58	1945:56	1104:26
ALT	177.07	166.40	166.38	191.75	230.62	210.34	237.05	208.88	187.92	175.10	164.86
LAT	74.36	62.39	21.74	-18.96	-59.09	-78.13	-39.44	0.67	41.09	80.12	55.78
LOW	222.72	76.25	63.92	56.65	45.56	266.14	236.66	228.78	220.74	183.73	50.86
MLAT	74.83	52.40	13.58	-25.55	-62.35	-67.25	-32.05	6.21	44.31	73.09	48.83
L	16.95	3.43	-1.03	-1.33	4.74	5.30	1.49	1.03	1.92	16.64	2.57
SZA	89.41	51.59	-22.44	39.49	75.72	113.14	147.71	153.73	121.05	83.10	45.65
MODE	A										

NRL 747

04/20/78

REV 0562

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

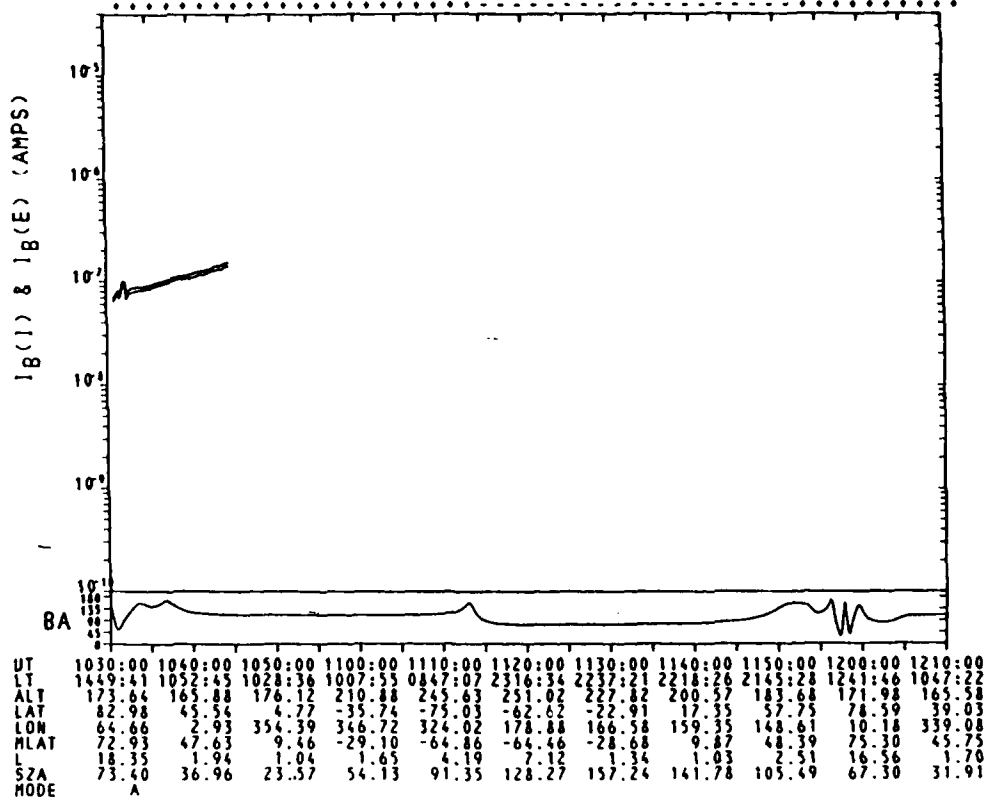
UT	0729:00	0739:00	0749:00	0759:00	0809:00	0819:00	0829:00	0839:00	0849:00	0859:00	0909:00
LT	2032:50	1110:56	1035:21	1016:16	0938:27	0012:26	2241:43	2224:58	2201:47	1855:26	1100:53
ALT	175.99	165.45	166.90	193.78	232.24	249.72	234.52	206.31	186.29	173.77	164.09
LAT	76.72	59.81	19.11	-21.57	-61.62	-75.88	-36.86	3.29	43.73	81.97	53.13
LOW	195.71	52.73	41.34	34.07	22.11	238.11	213.94	206.24	197.94	148.85	27.72
MLAT	72.05	52.46	14.56	-24.01	-60.12	-67.03	-33.26	4.58	42.39	71.73	50.10
L	13.02	3.10	-1.03	-1.44	3.92	5.88	1.54	1.02	1.81	15.98	2.40
SZA	86.93	49.24	21.78	41.68	78.15	115.54	149.59	152.15	118.61	80.58	43.33
MODE	A										

NRL 747

04/20/78

REV 0564

FORMAT A

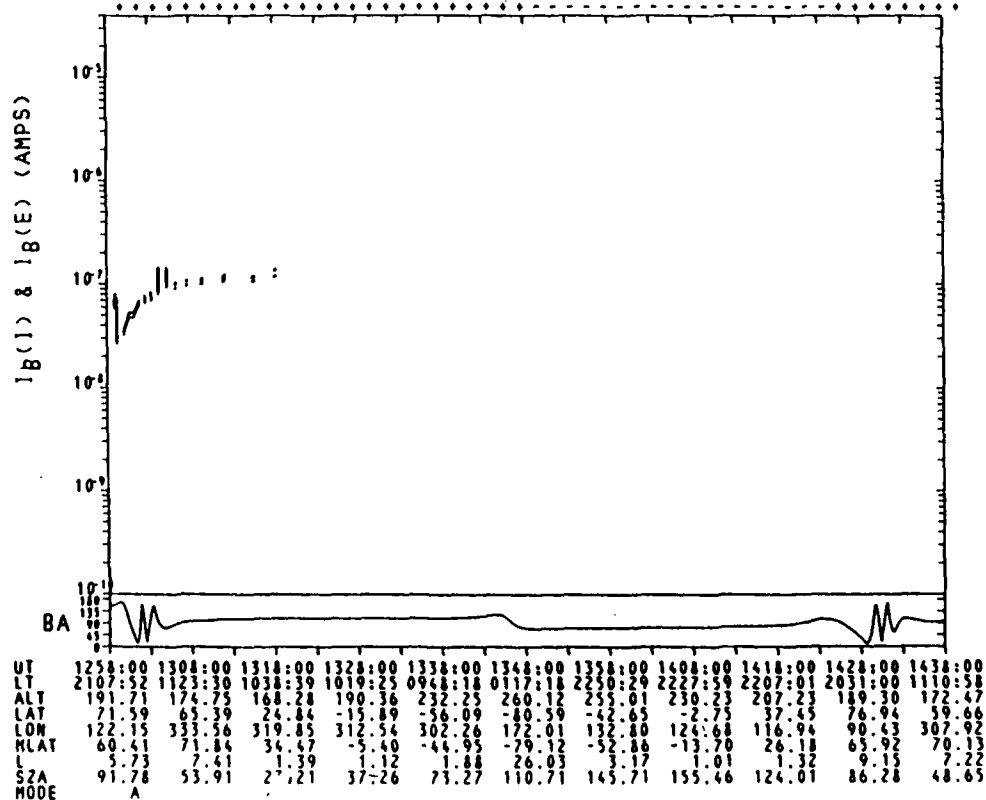


NRL 747

04/21/78

REV 0582

FORMAT A

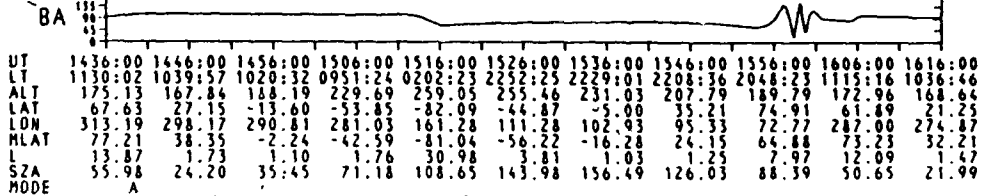


NRL 747

04/21/78

REV 0583

FORMAT A

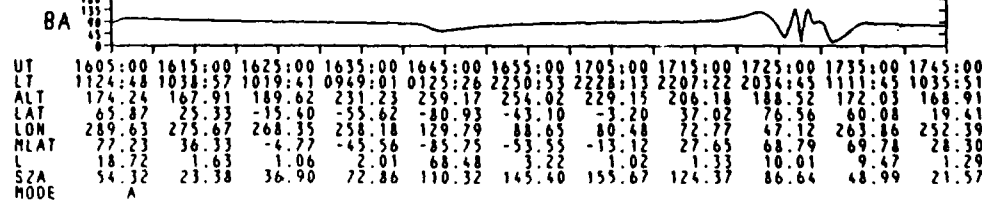
 $I_B(I)$  &  $I_B(E)$  (AMPS)

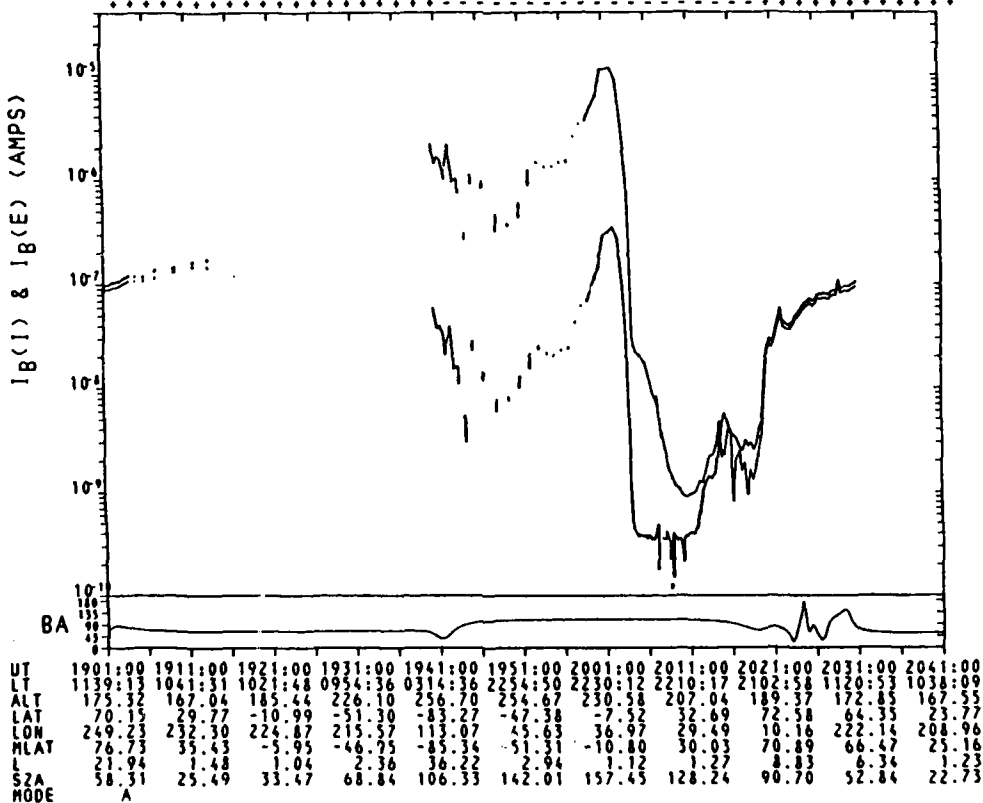
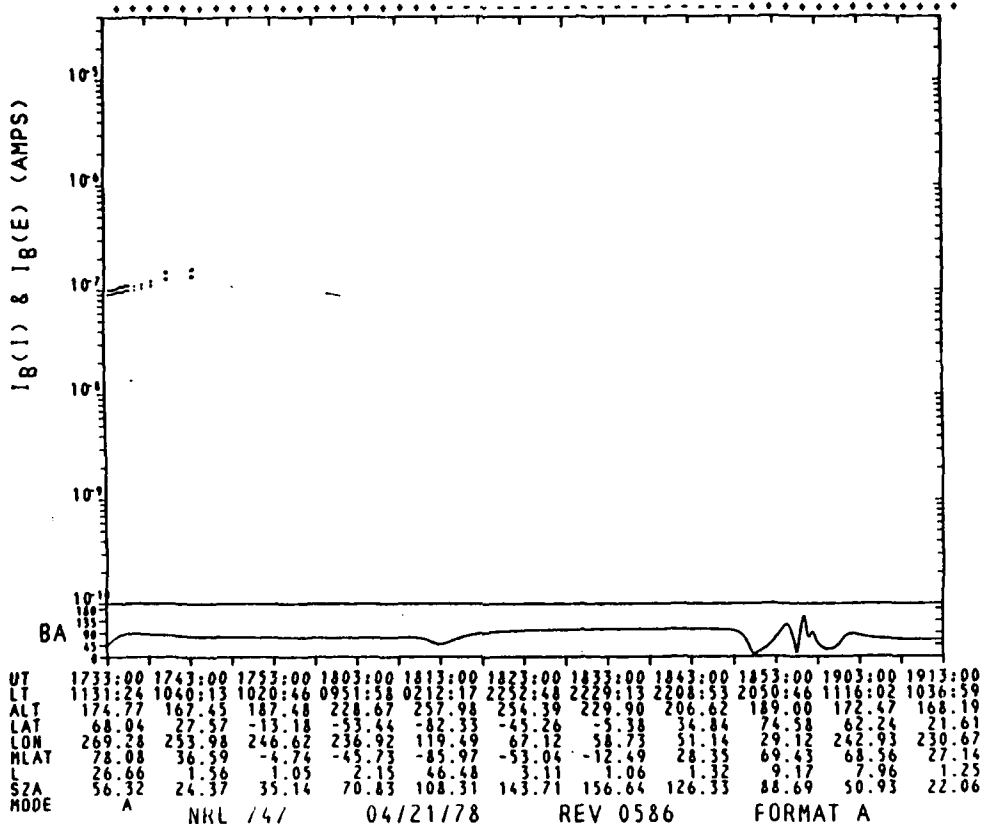
NRL 747

04/21/78

REV 0584

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)



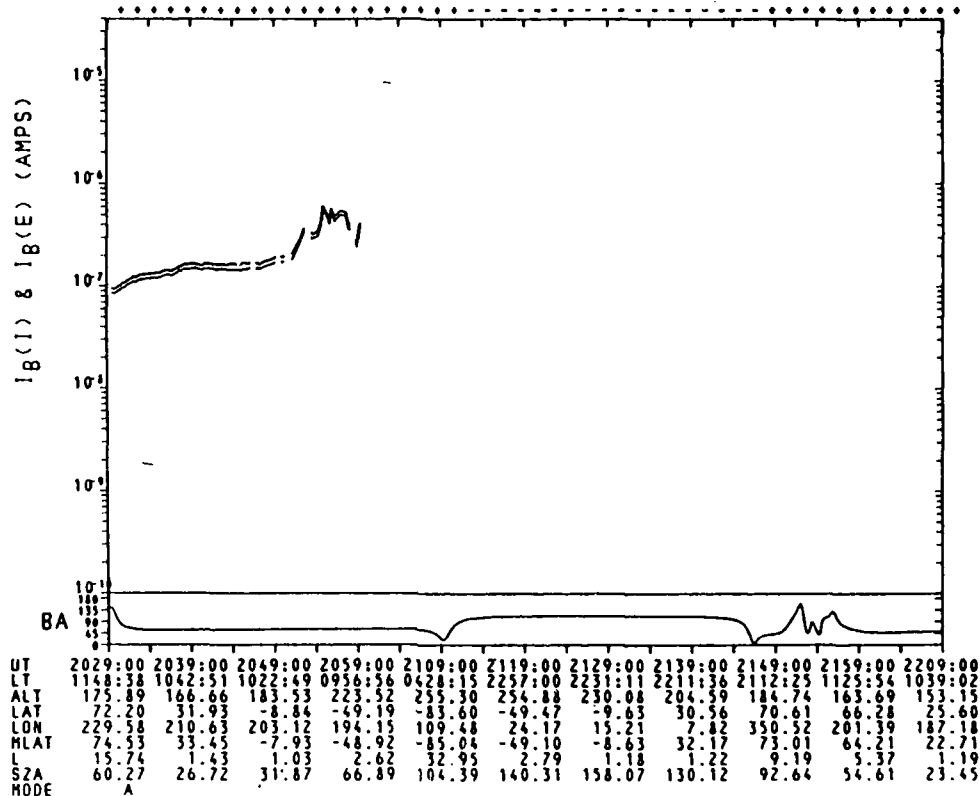


NRL 747

04/21/78

REV 0587

FORMAT A

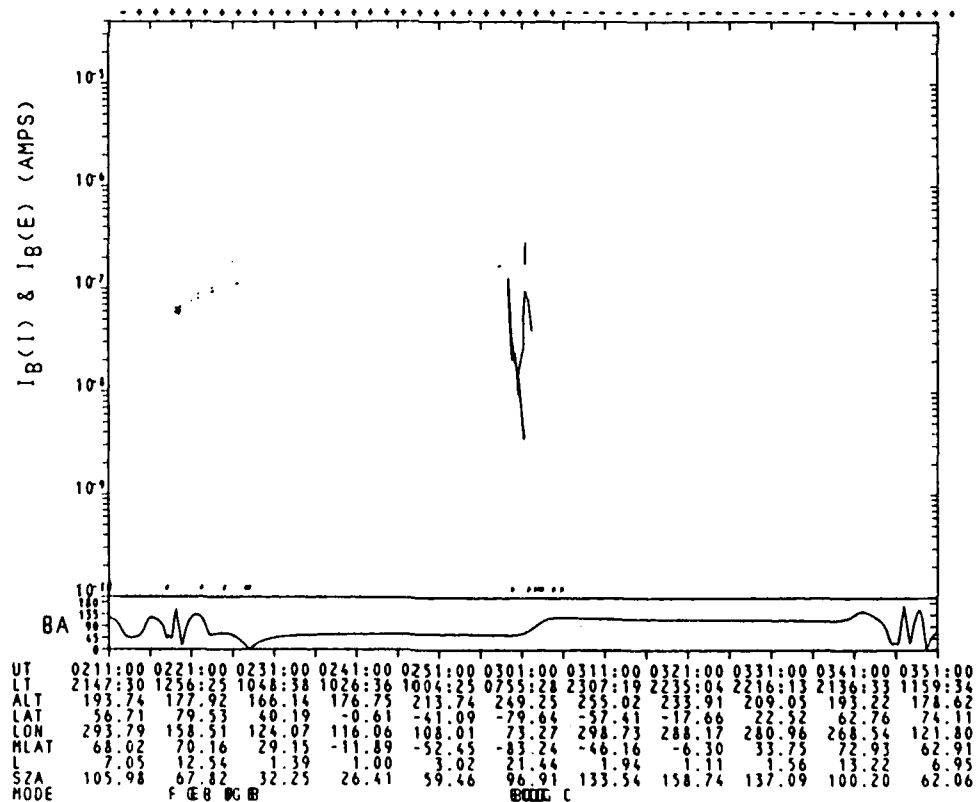


NRL 747

04/22/78

REV 0591

FORMAT C

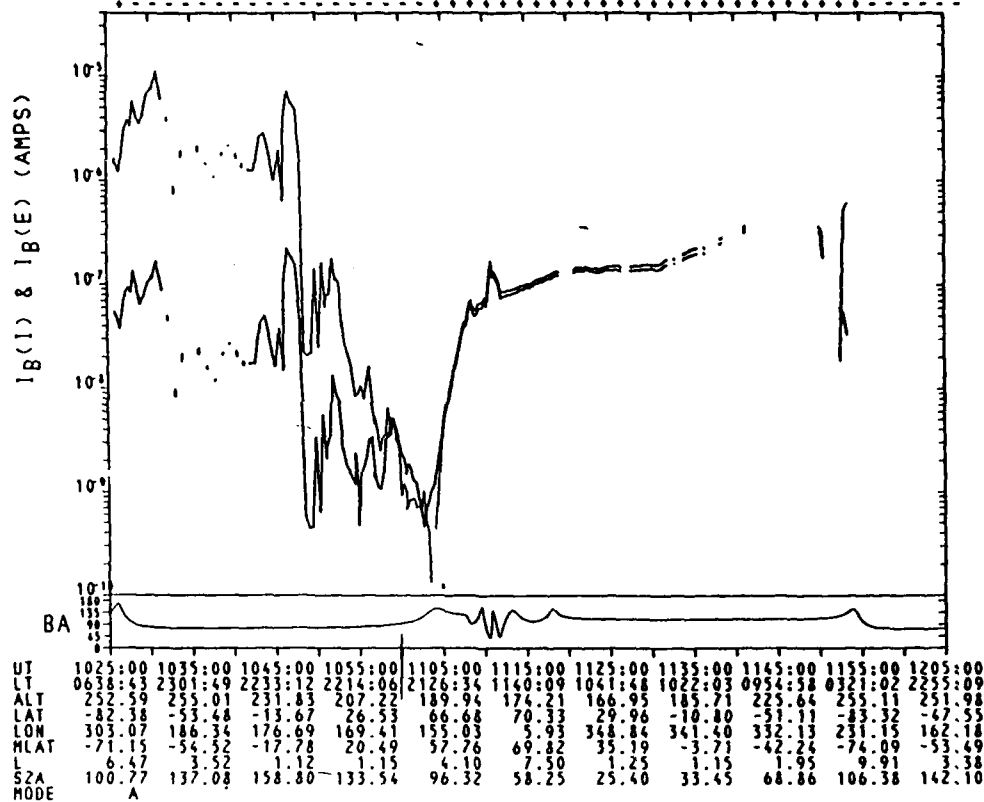


NRL 747

04/22/78

REV 0596

FORMAT A

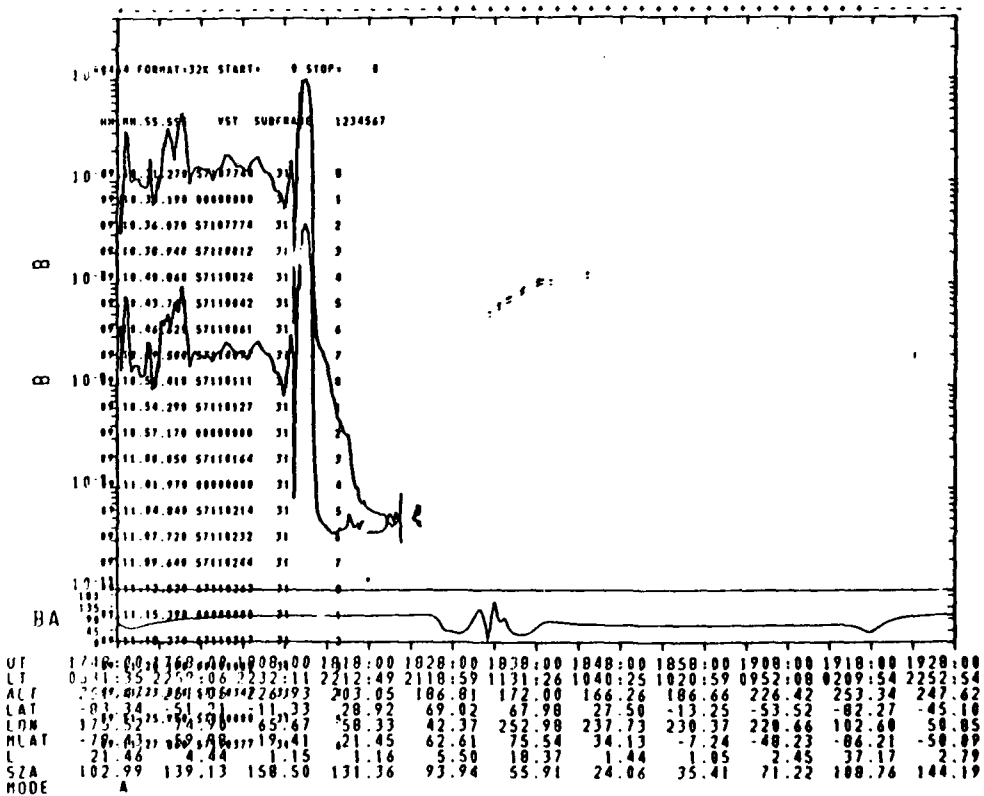


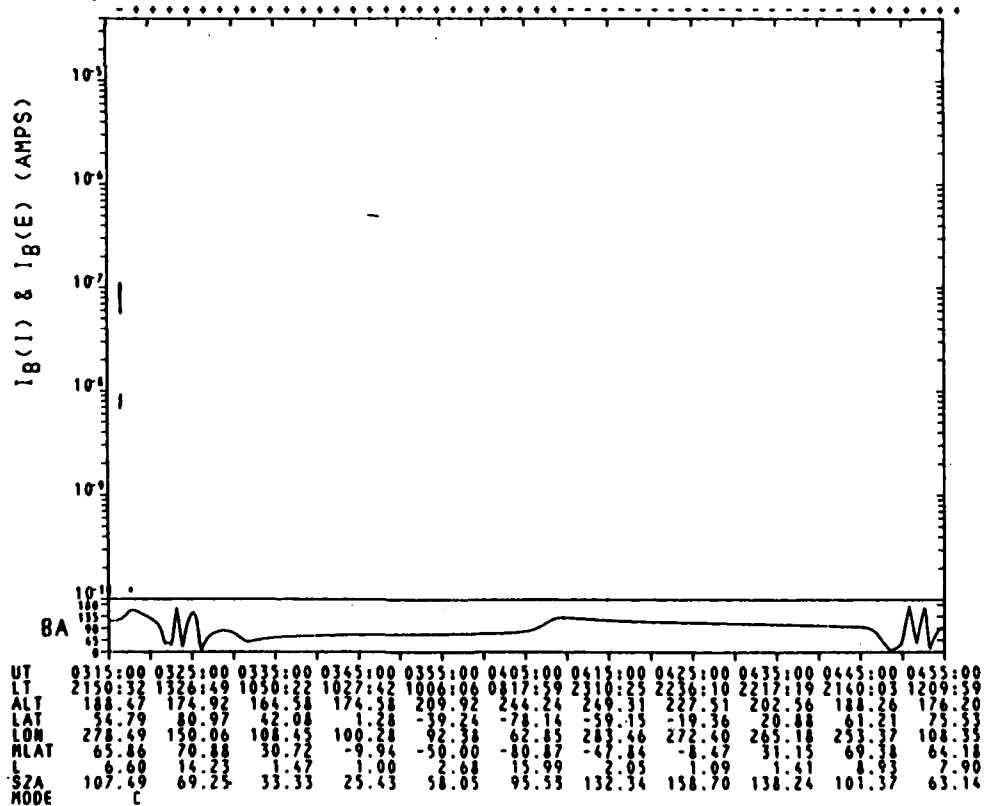
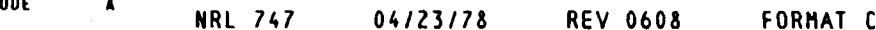
NRL 747

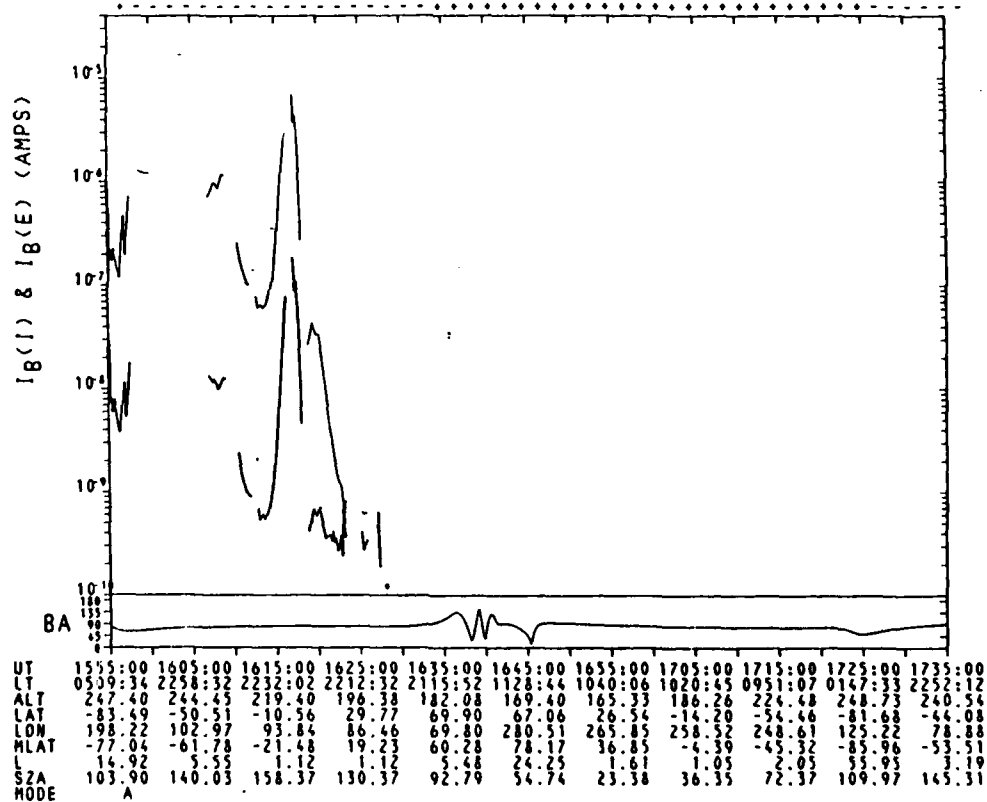
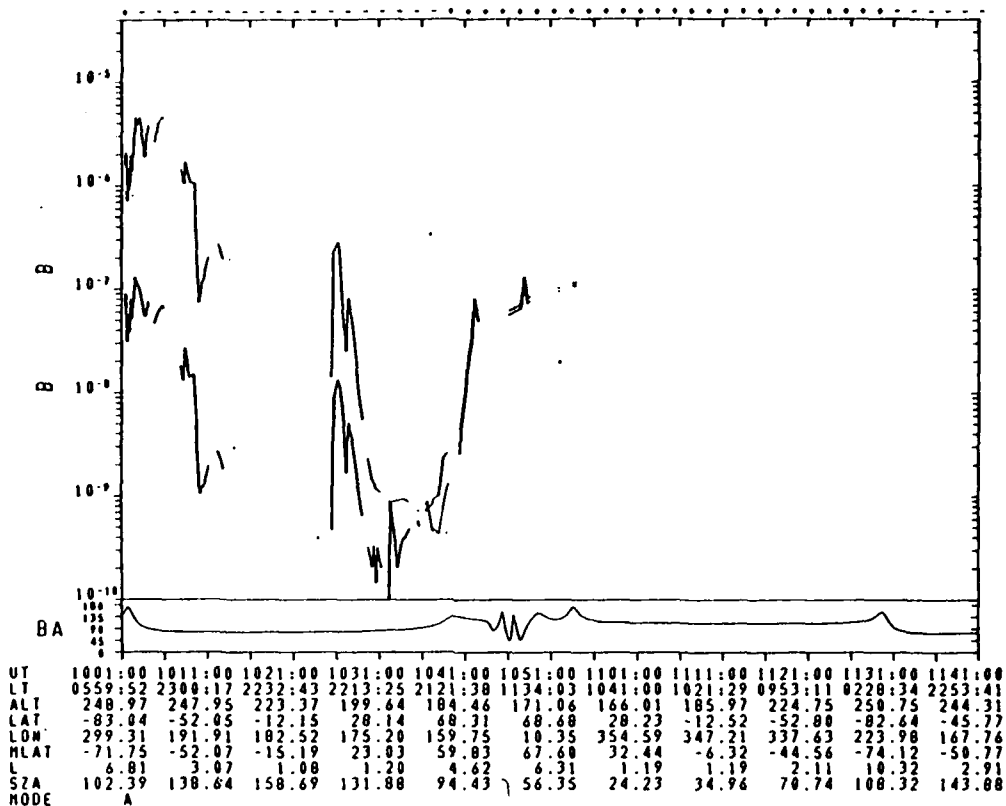
04/22/78

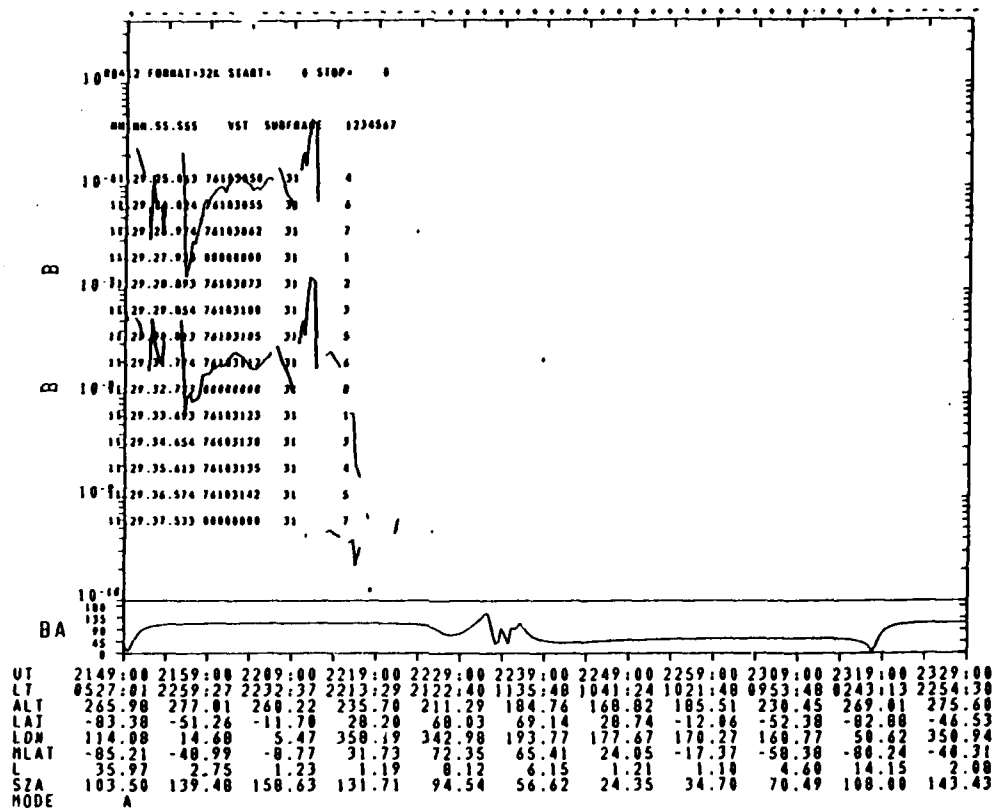
REV 0601

FORMAT A







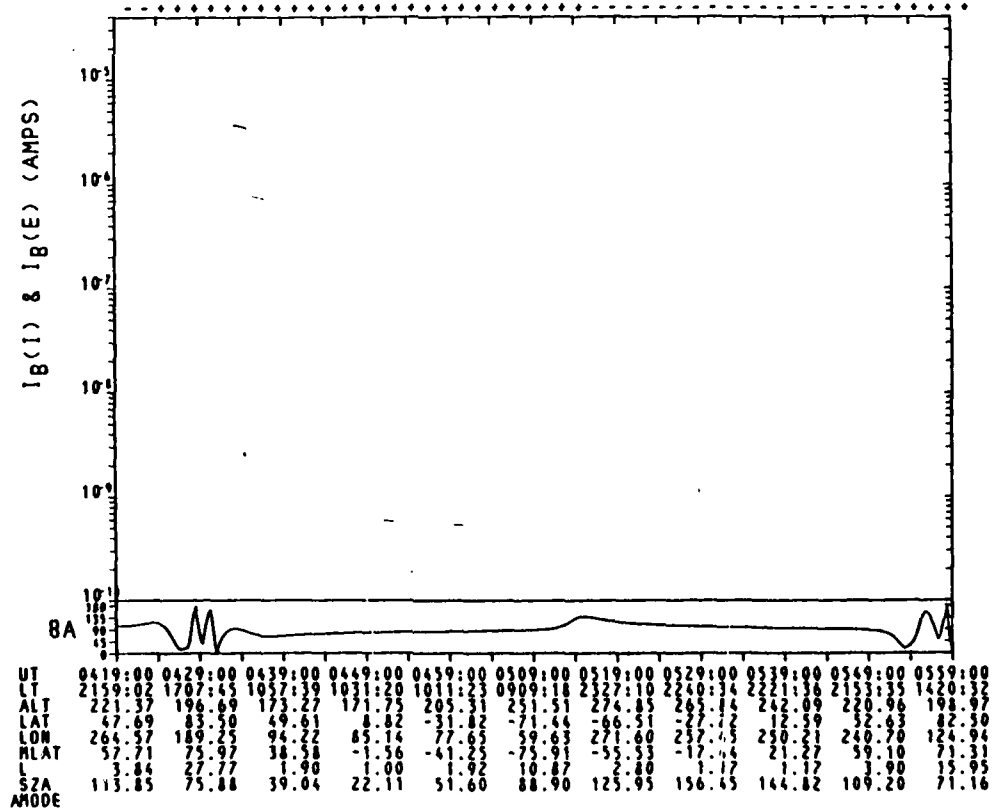


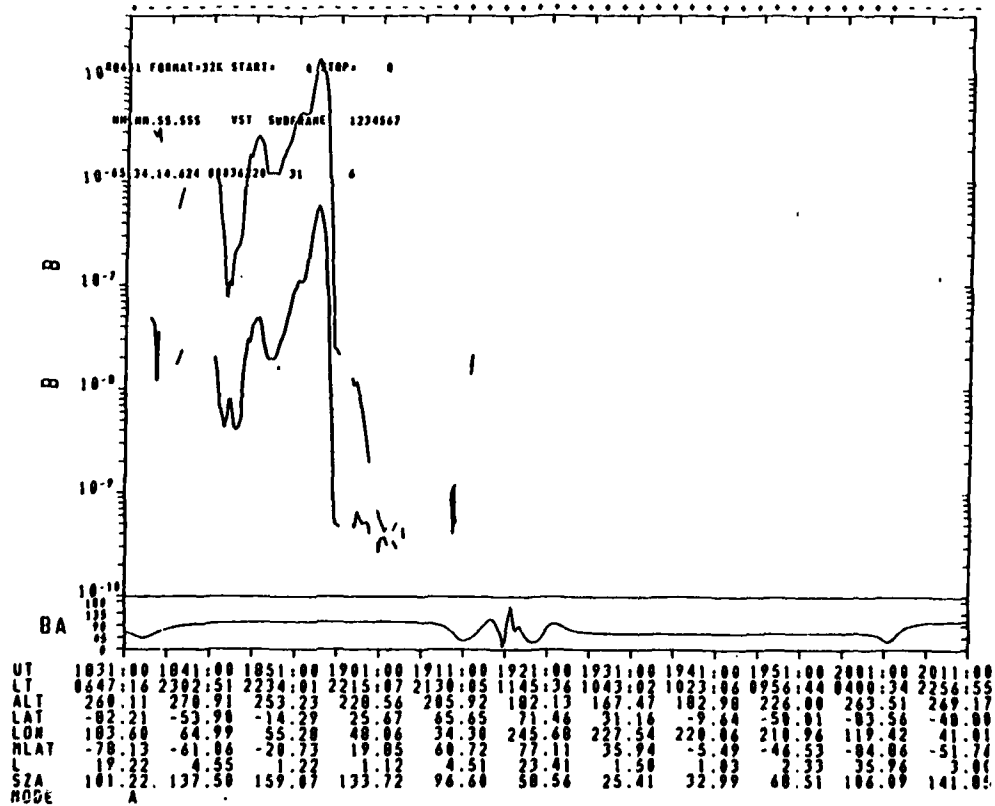
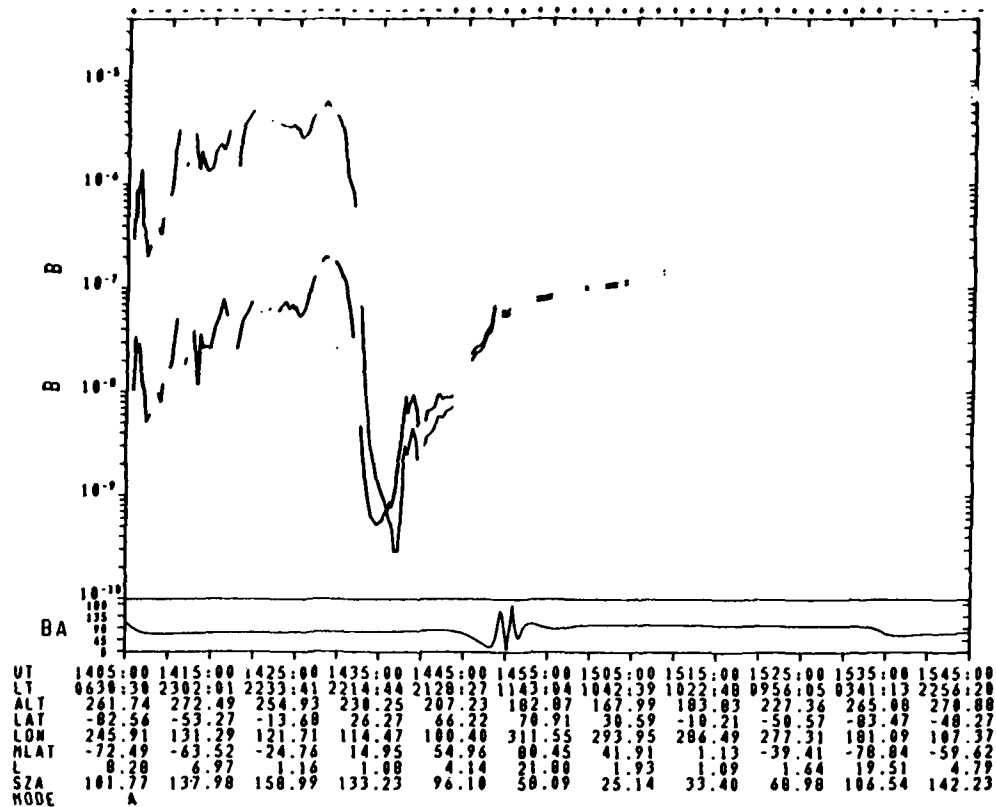
NRL 747

04/24/78

REV 0625

FORMAT C





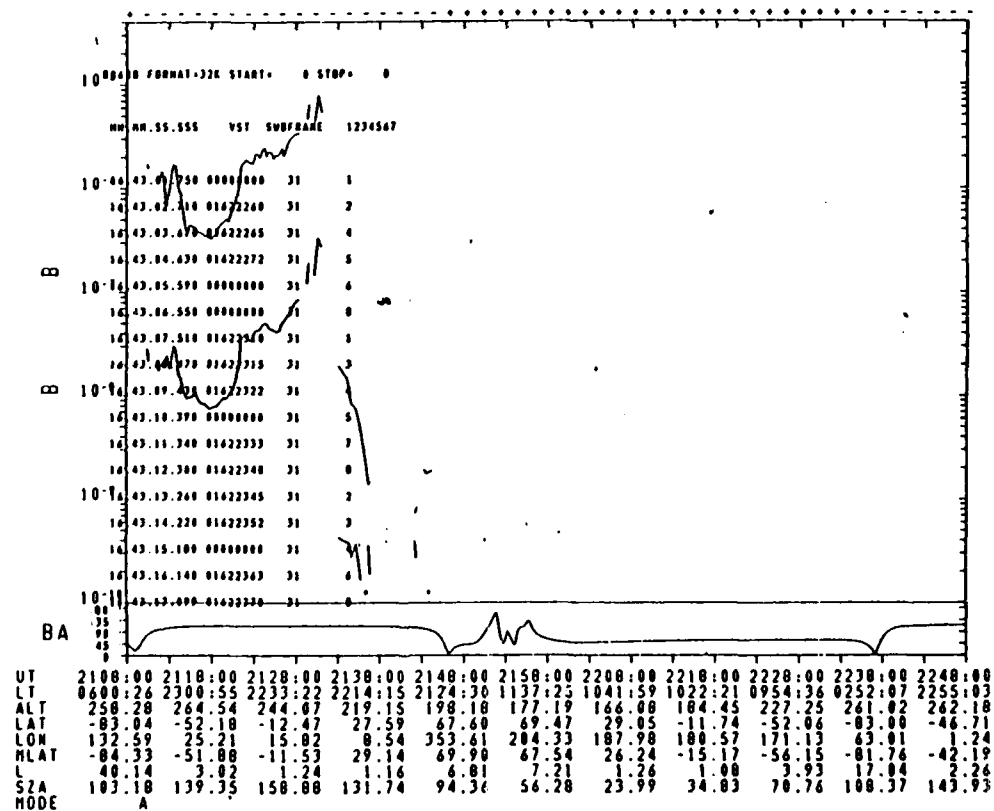
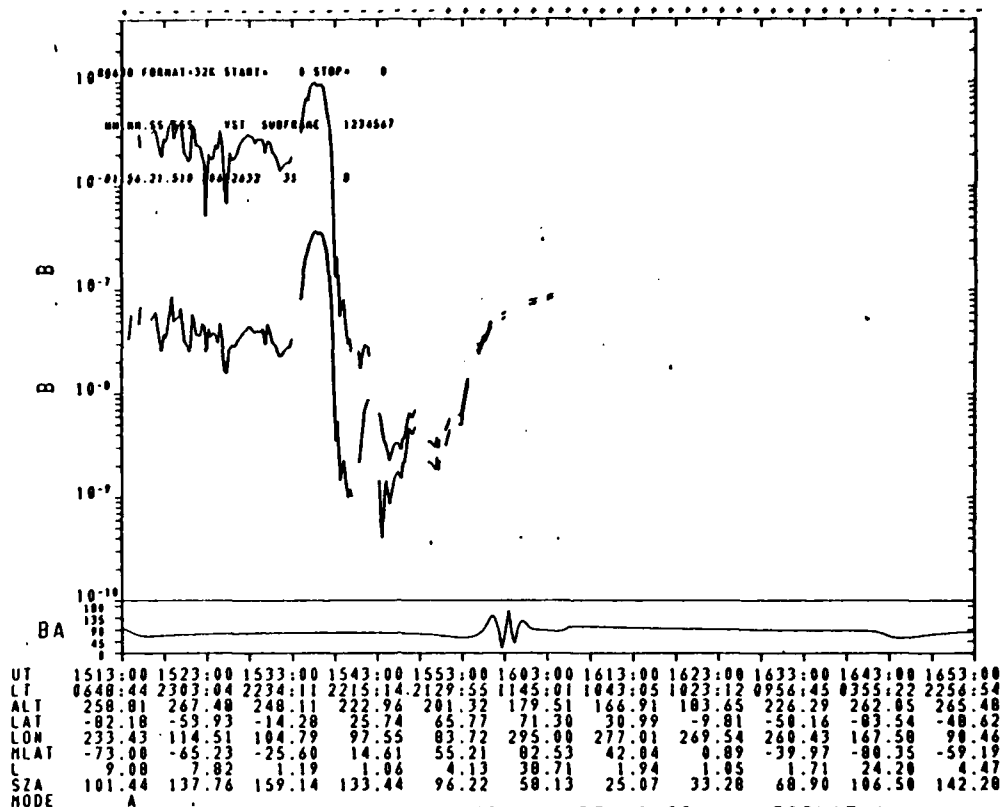


NRL 747

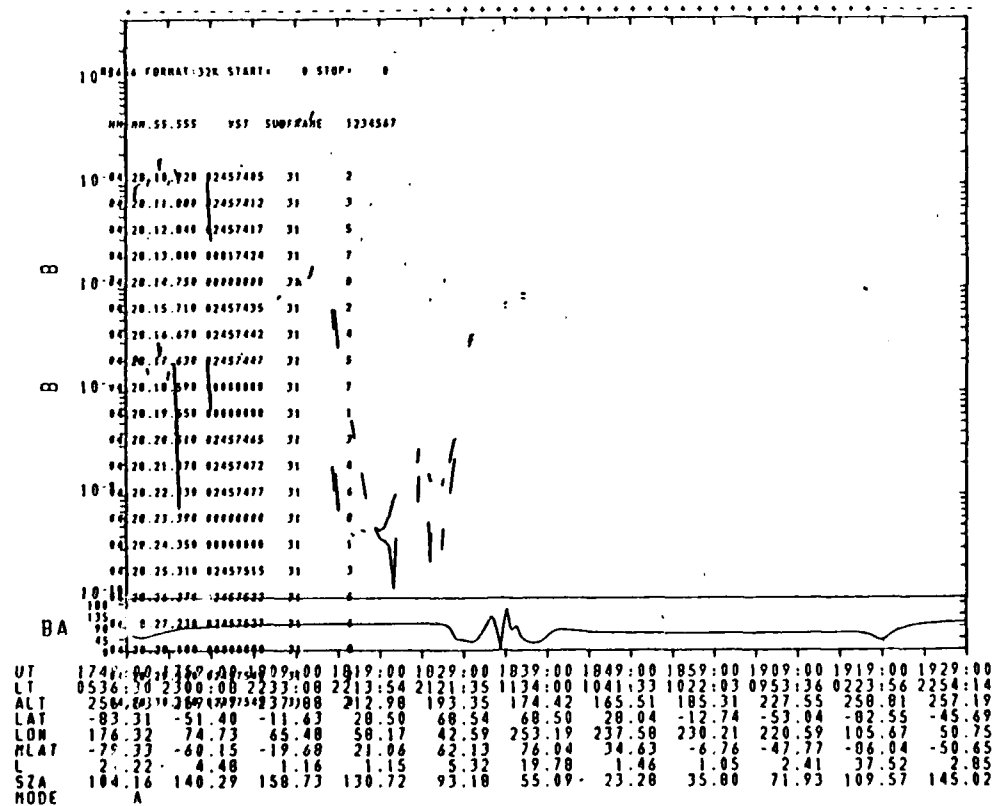
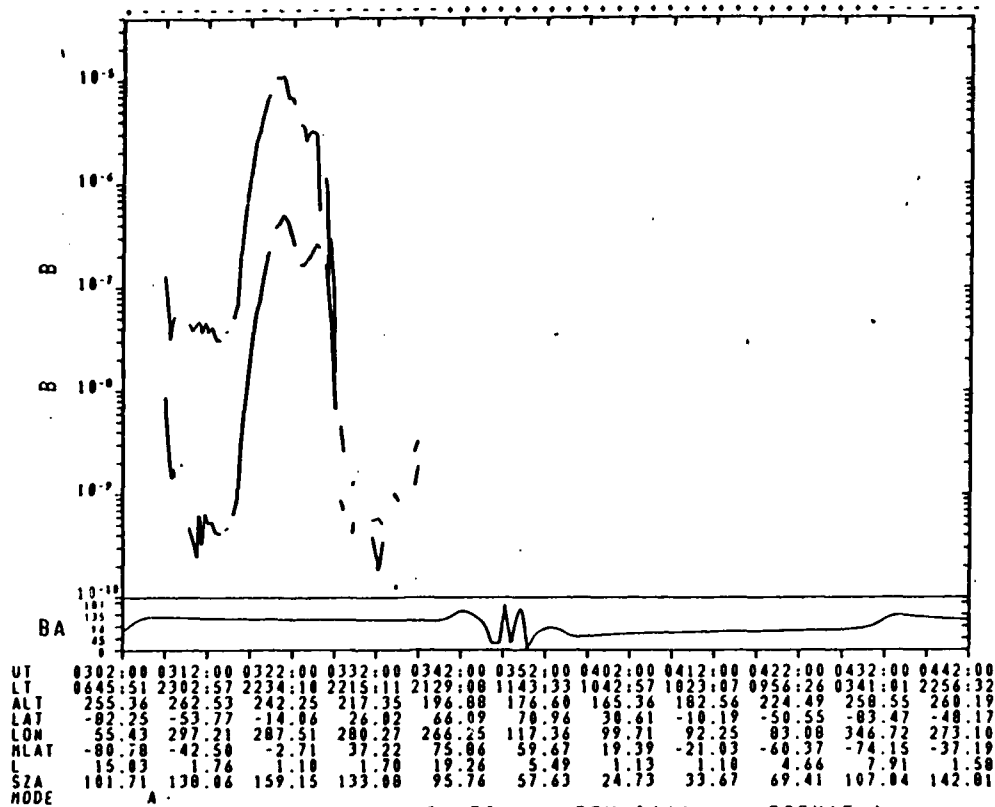
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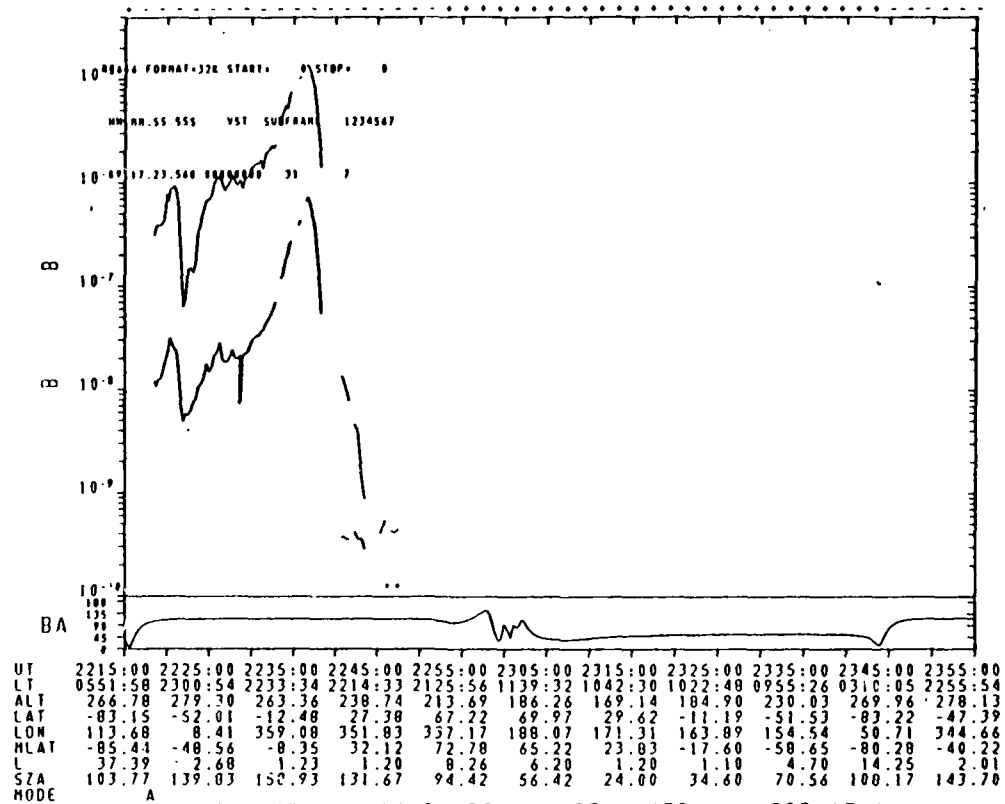
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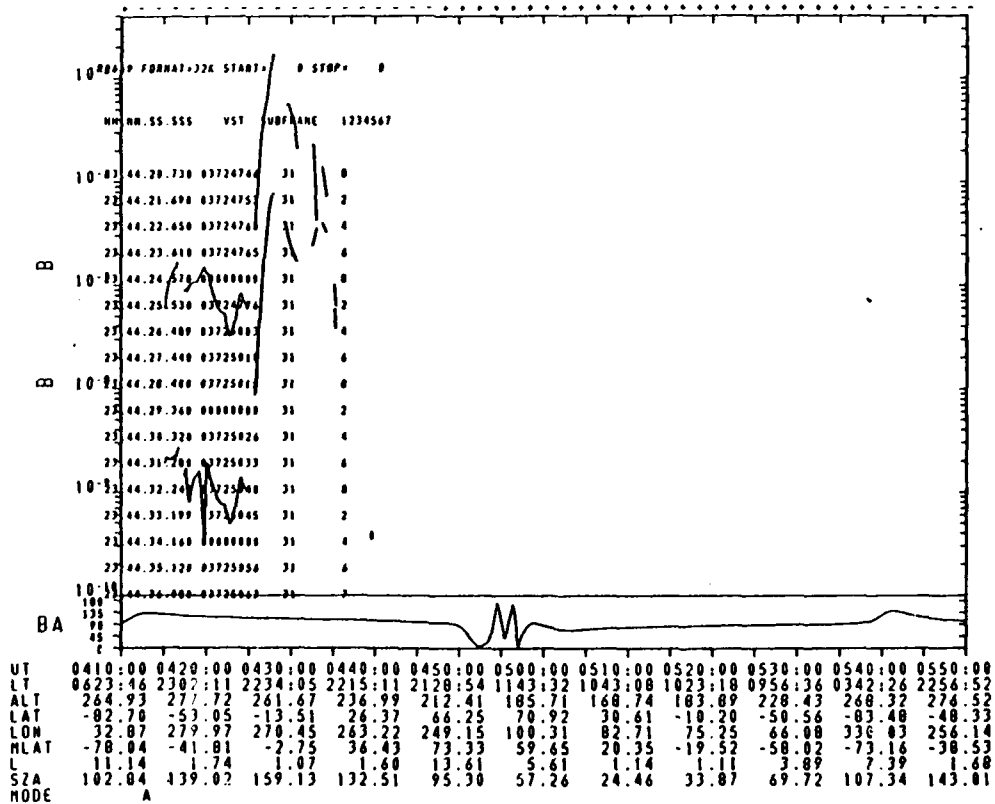








FORMAT A

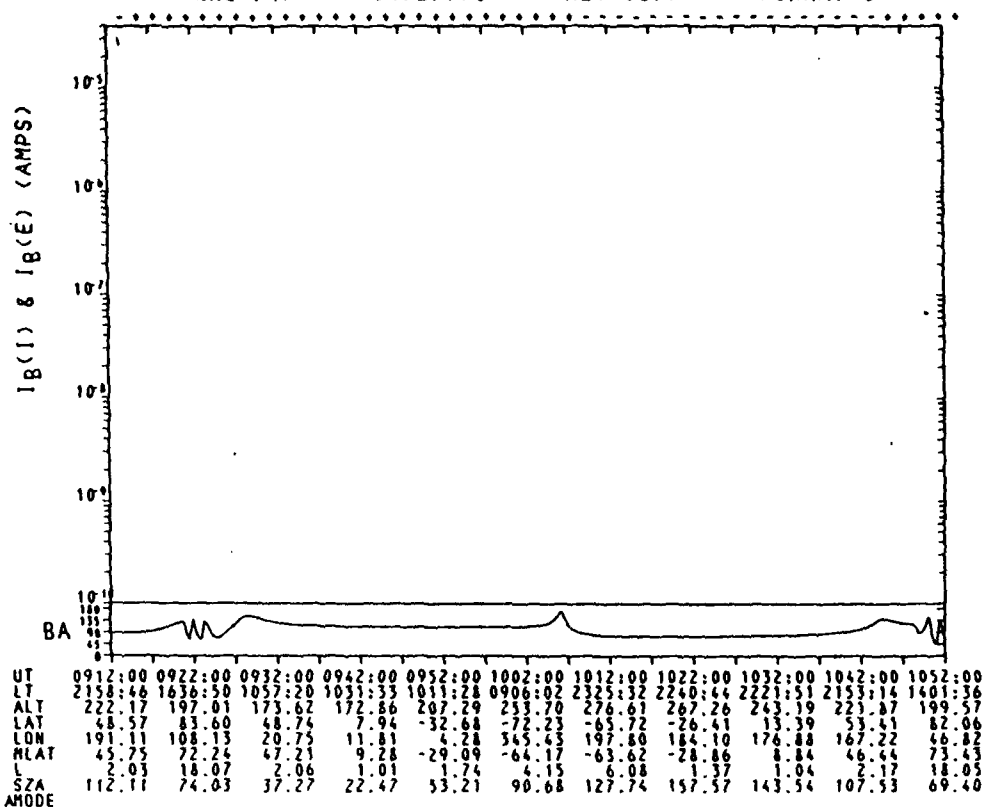


NRL 747

04/27/78

REV 0677

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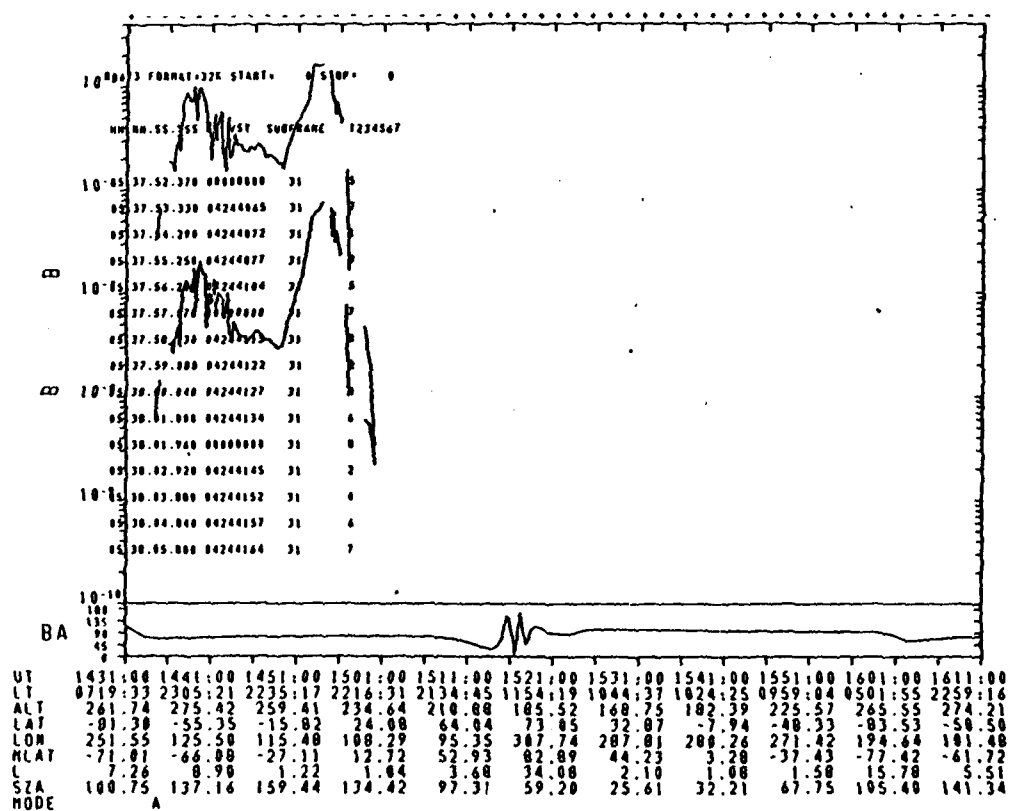


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04/27/78

REV 0680

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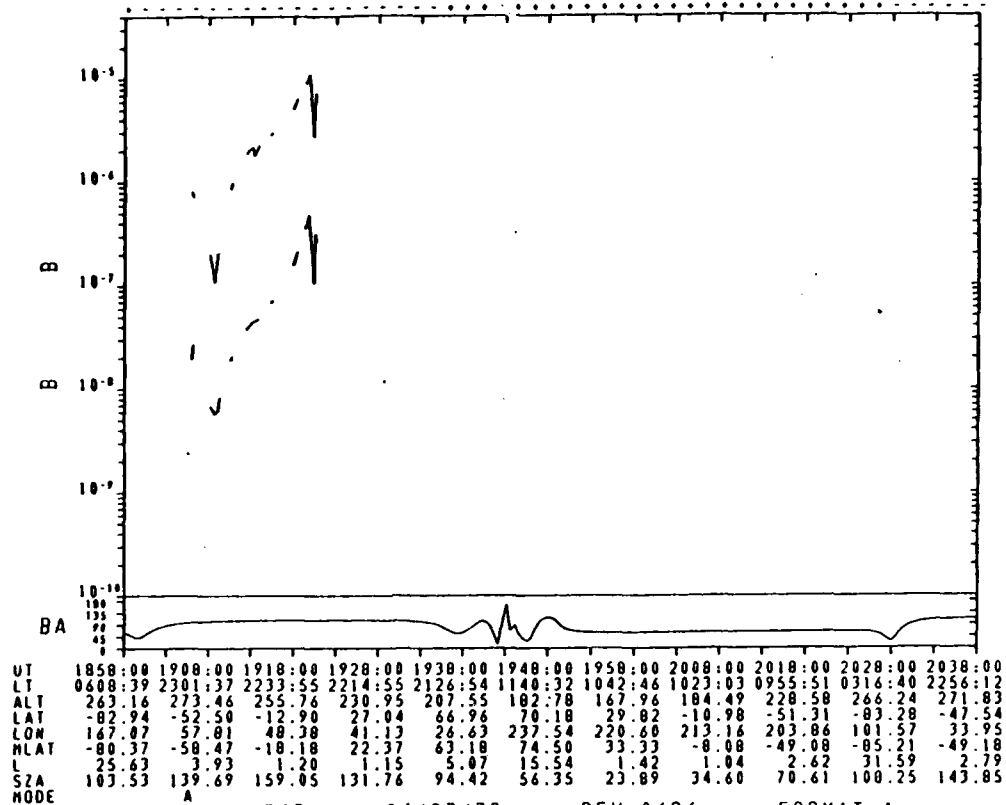


NRL 747

04/27/78

REV 0683

FORMAT A

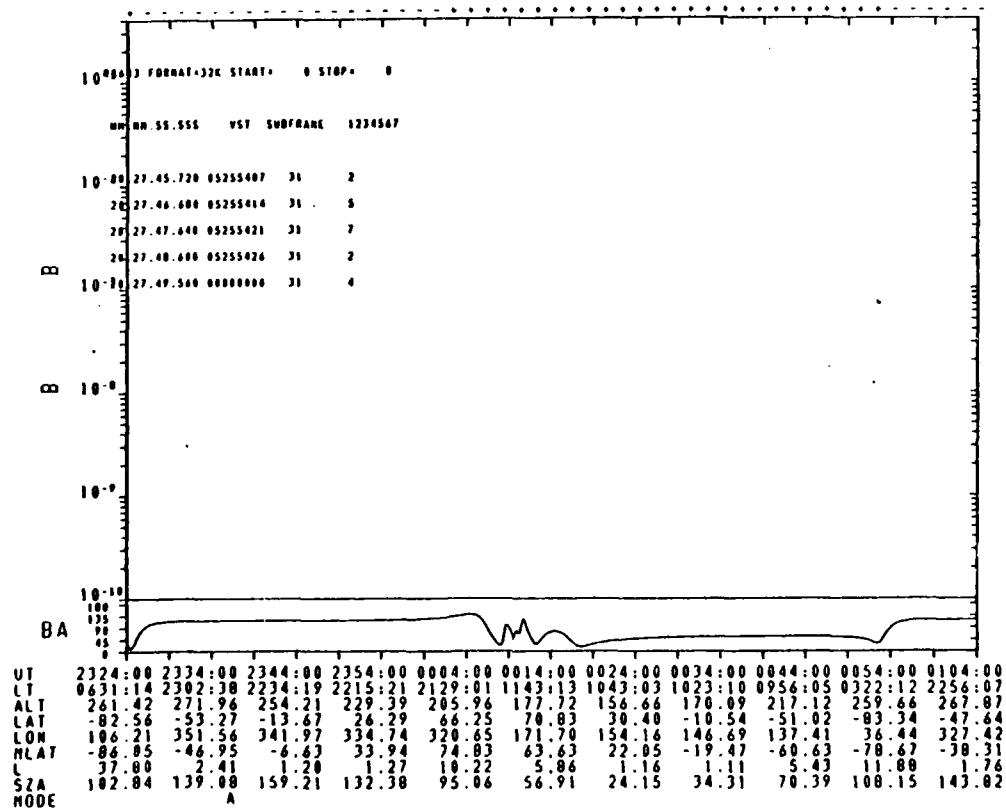


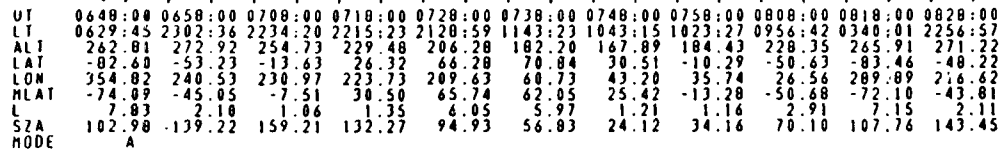
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04/27/78

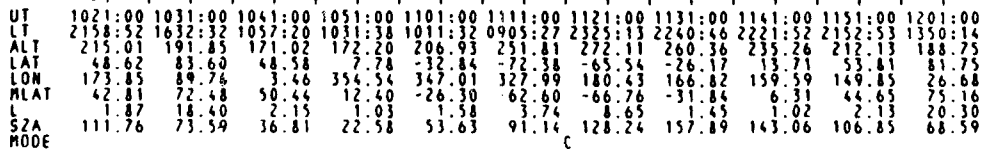
REV 0686

FORMAT A





FORMAT C



AD-A117 269

NAVAL RESEARCH LAB WASHINGTON DC

F/S 8/1

AN ATLAS OF IONOSPHERIC F-REGION STRUCTURES AS DETERMINED BY TH-ETC(U)

JUL 62 E P SZUSZCZEWICZ, J C HOLMES

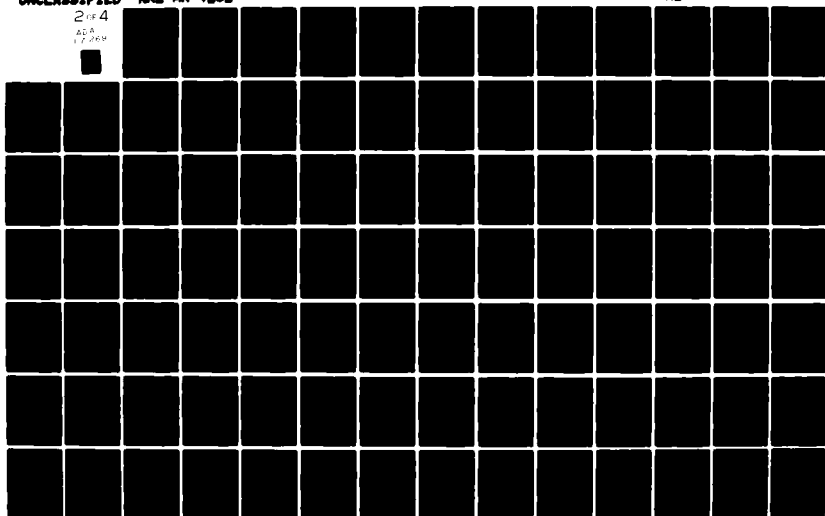
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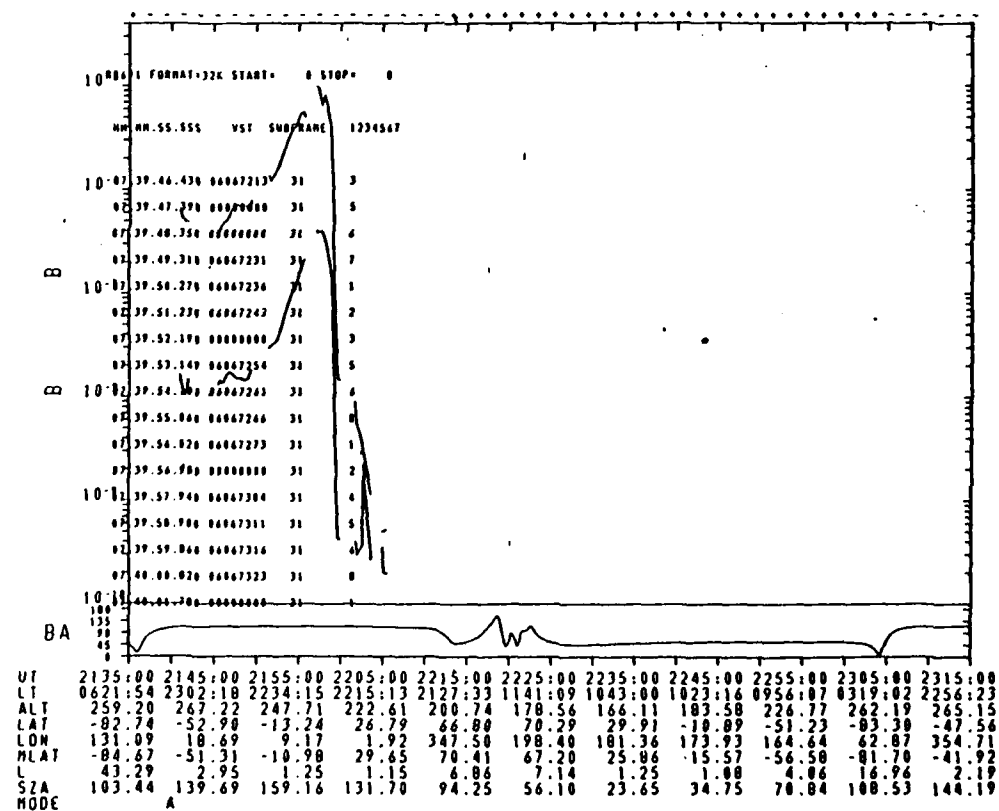
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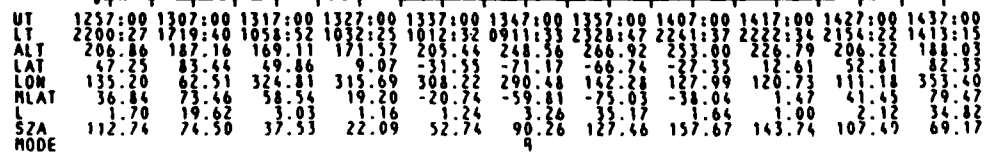
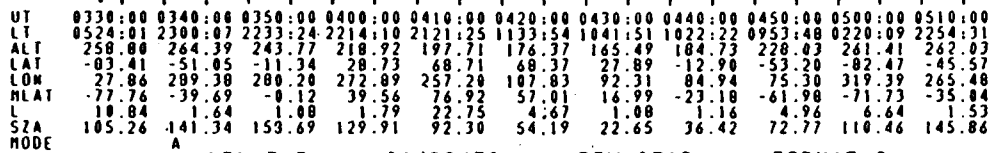
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2 OF 4

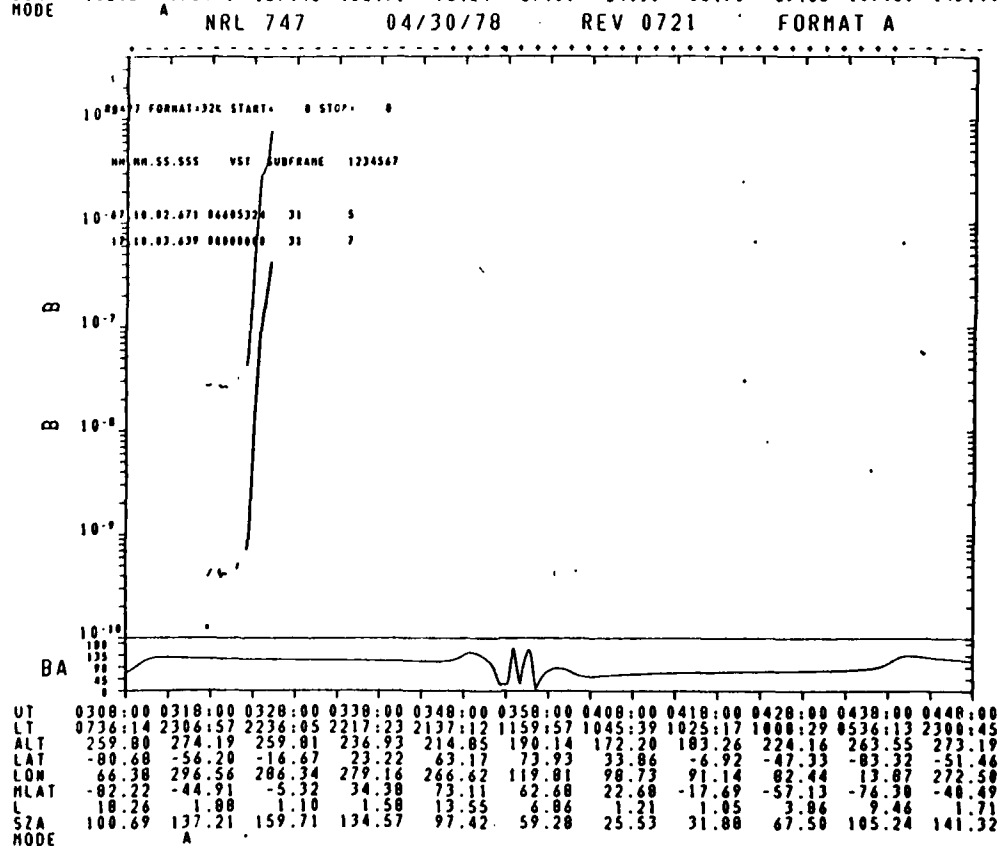
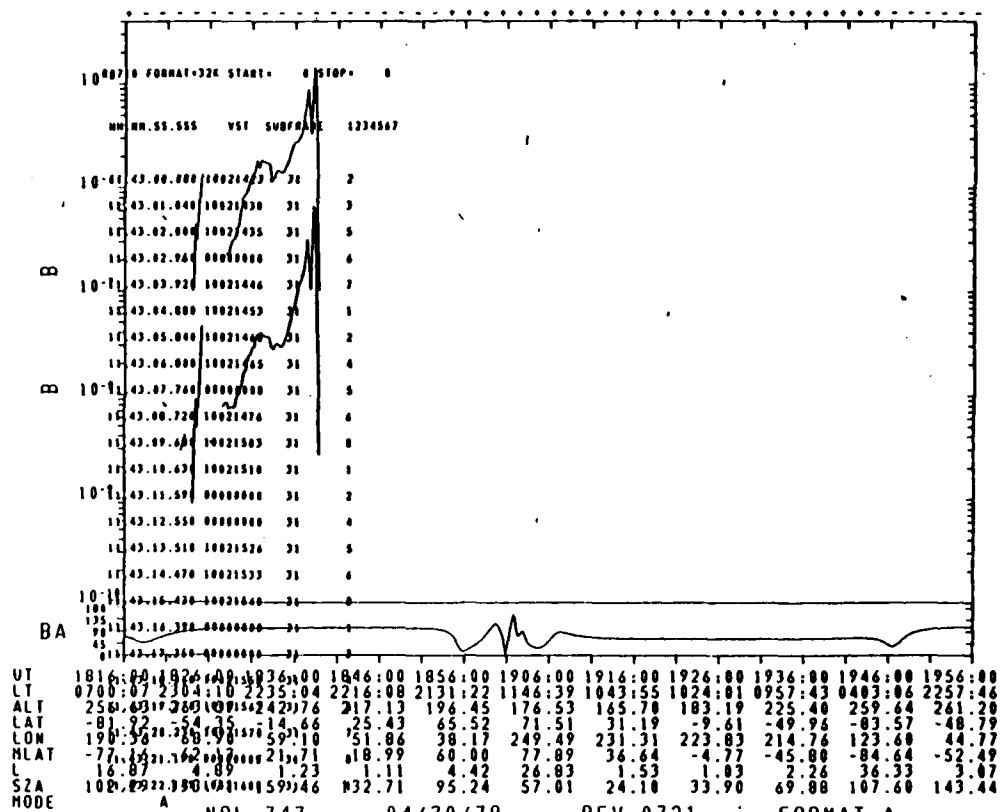
AD-A117 269









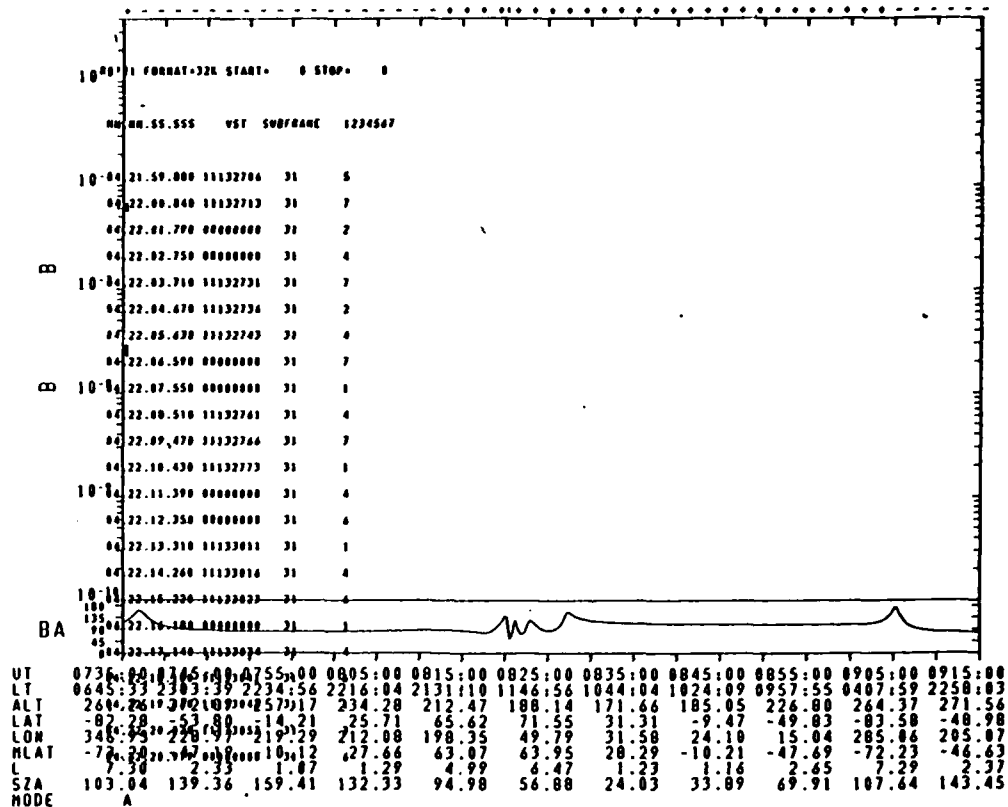


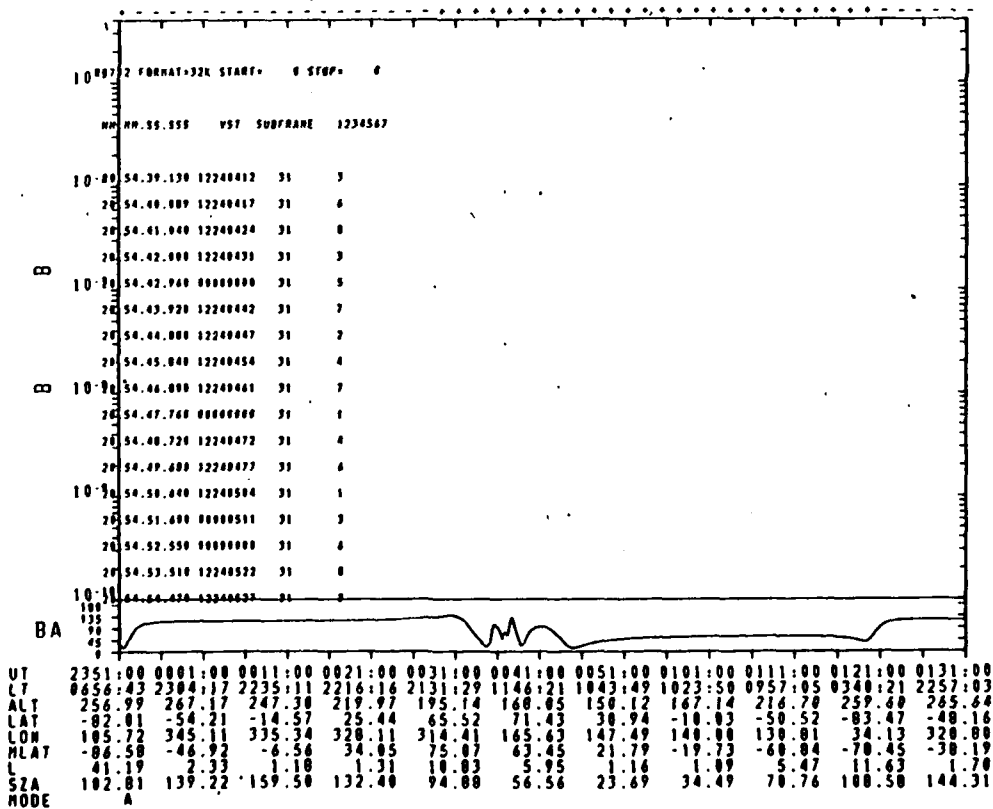
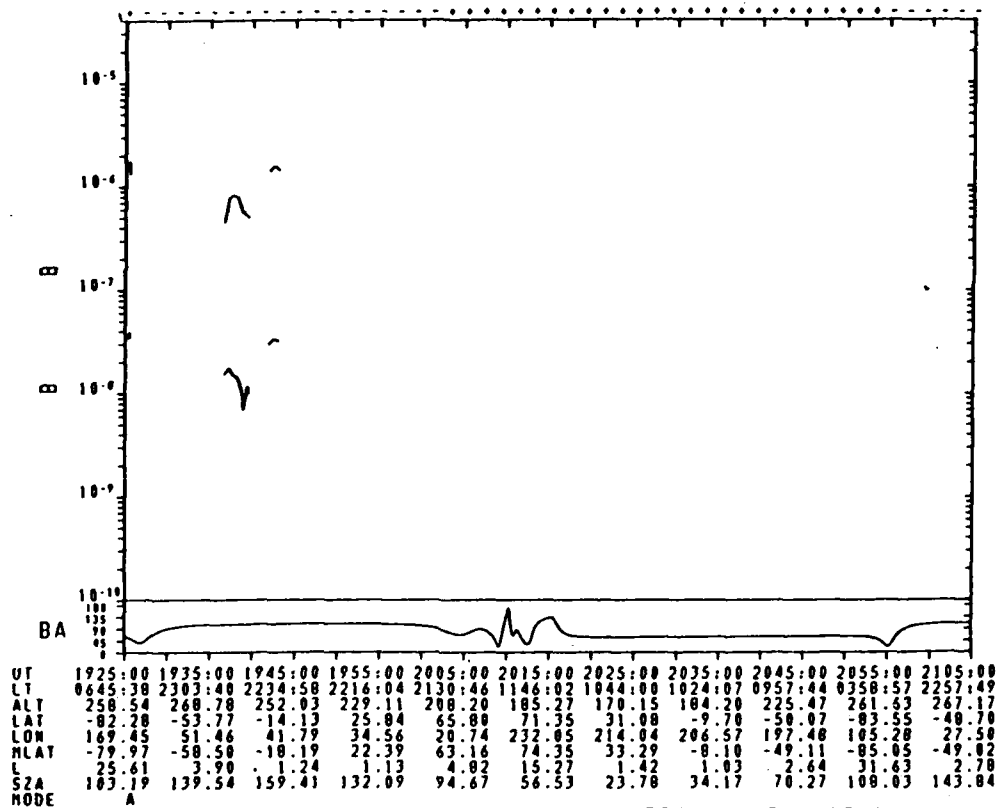
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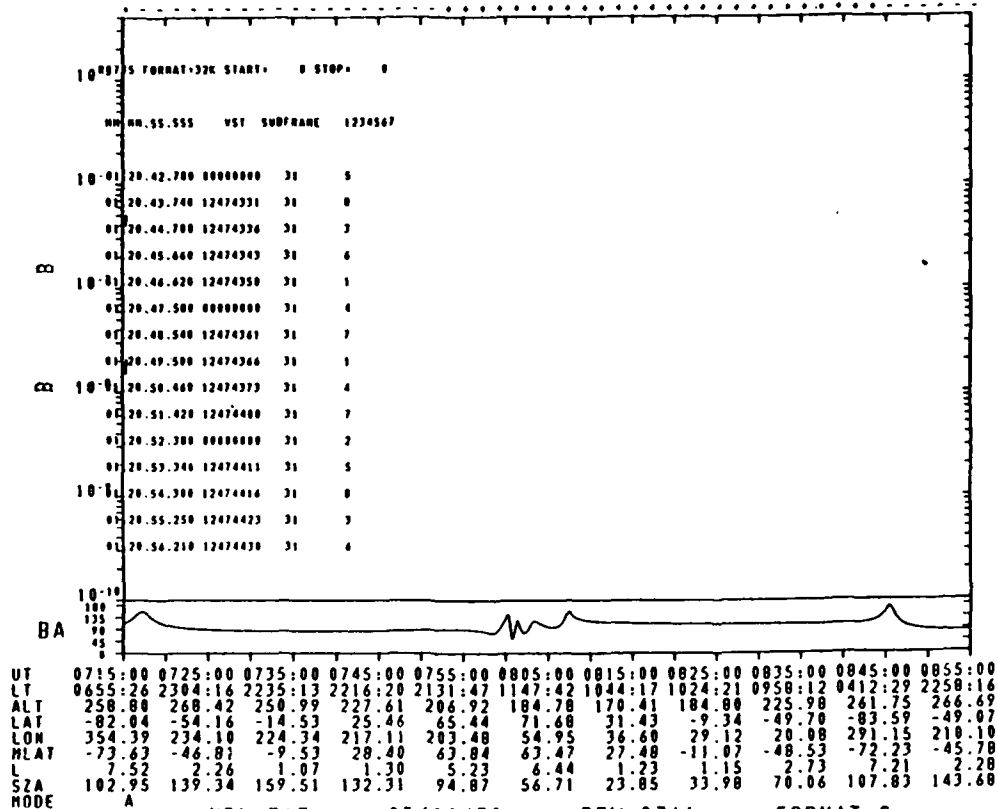
04/30/78

REV 0724

FORMAT A





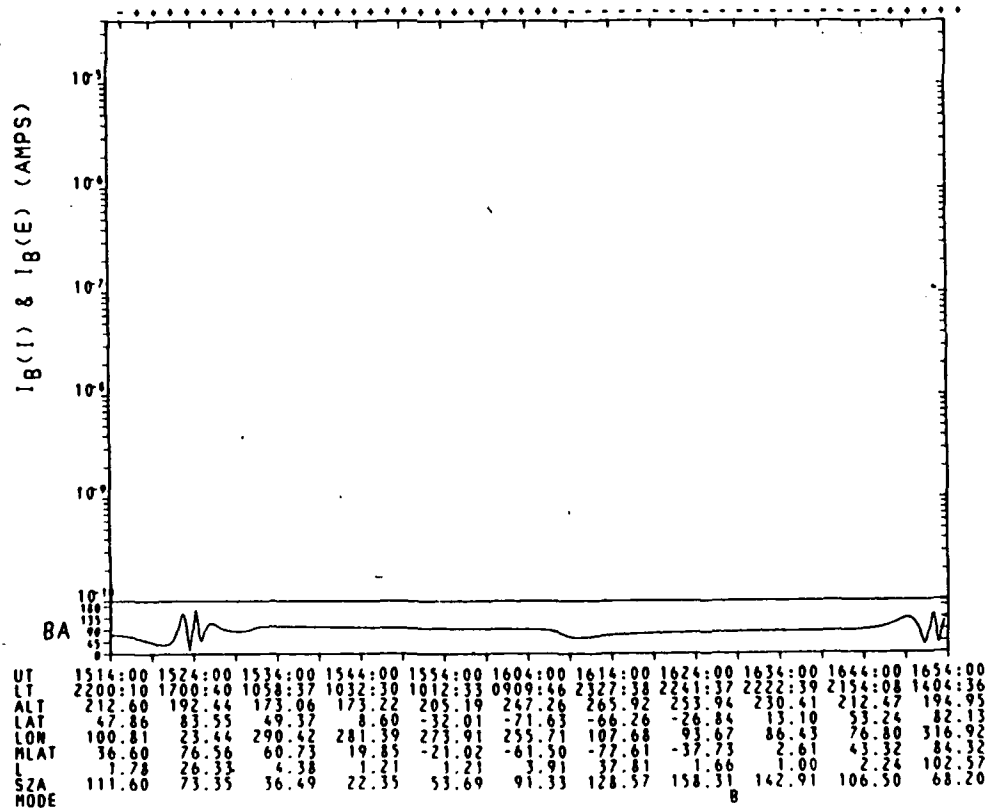


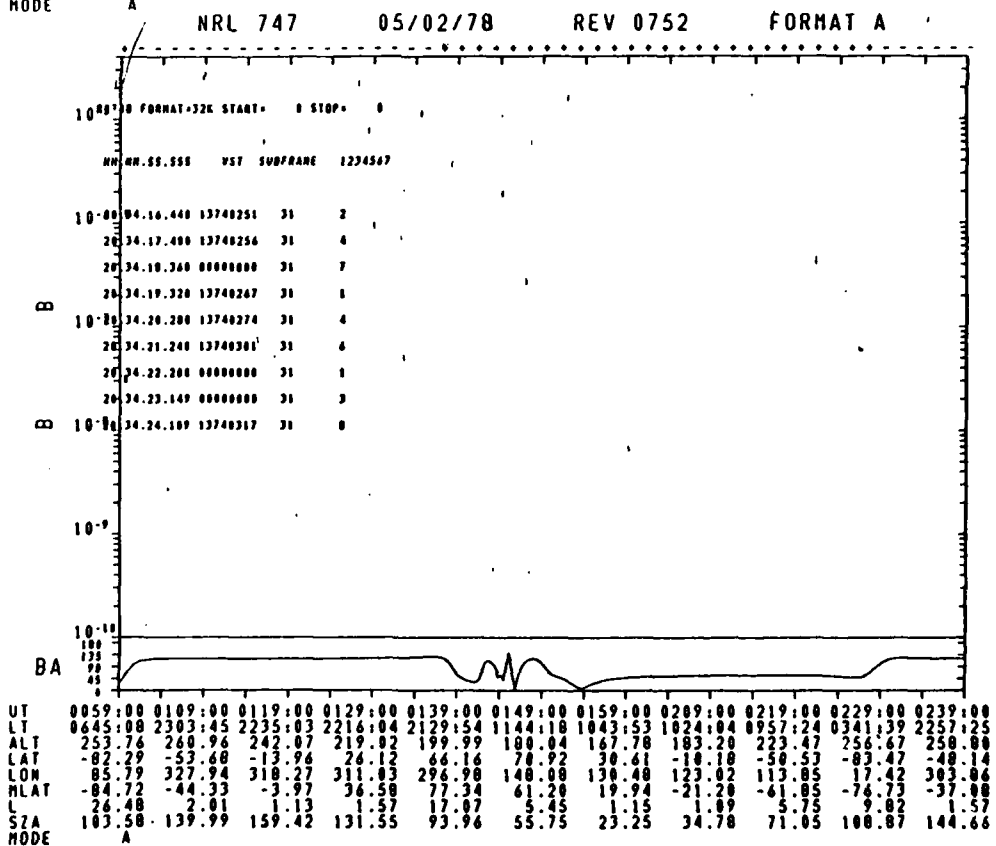
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05/01/78

REV 0746

FORMAT C



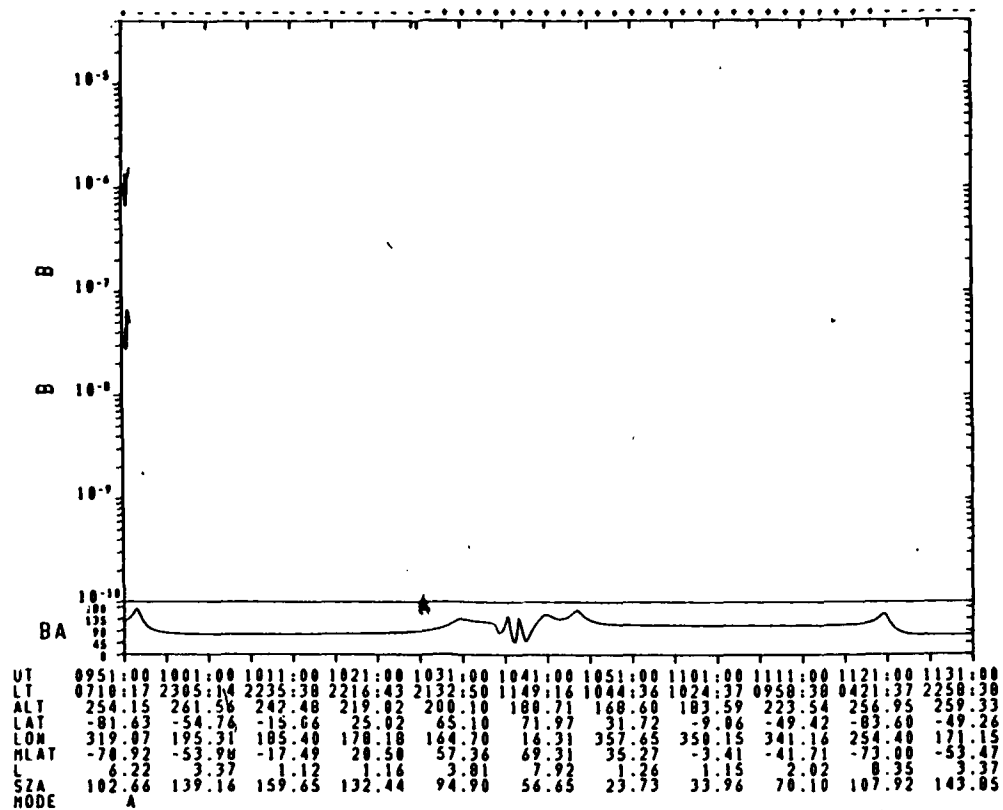


NRL 747

05/02/78

REV 0759

FORMAT A

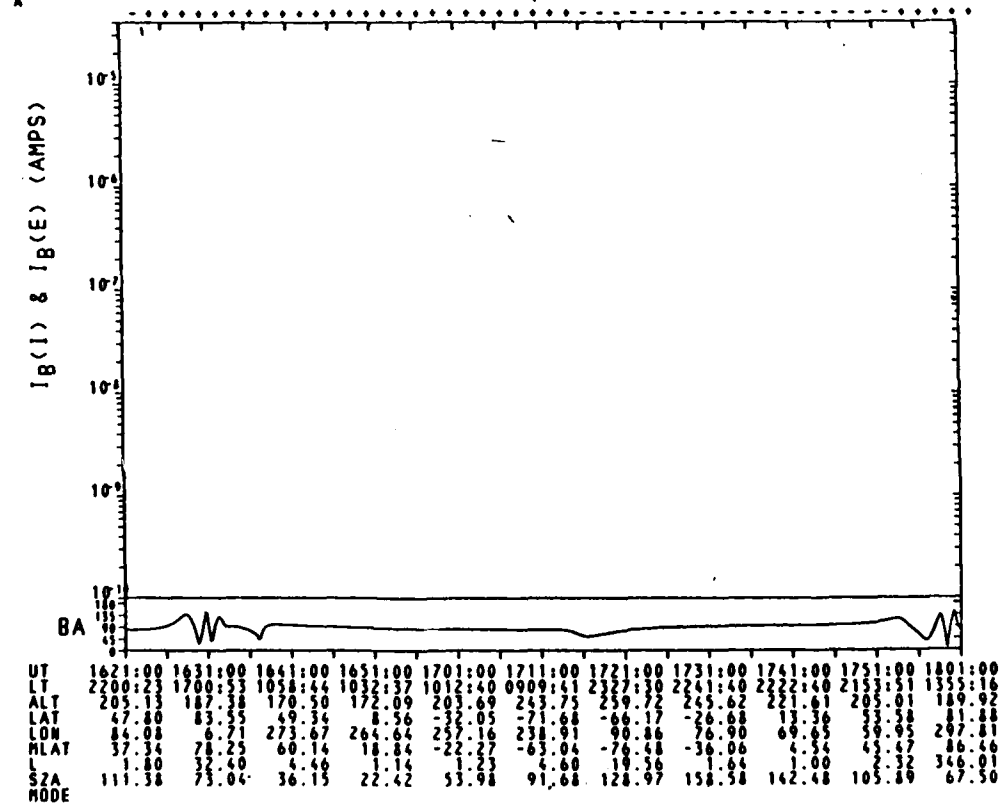


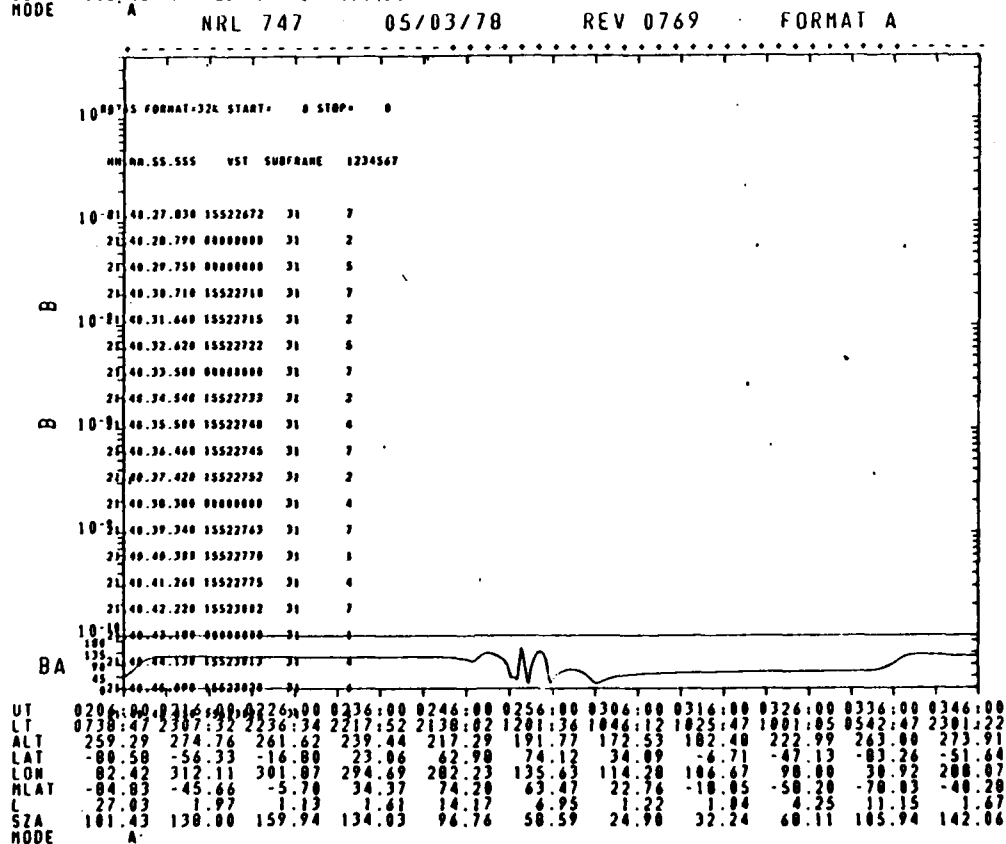
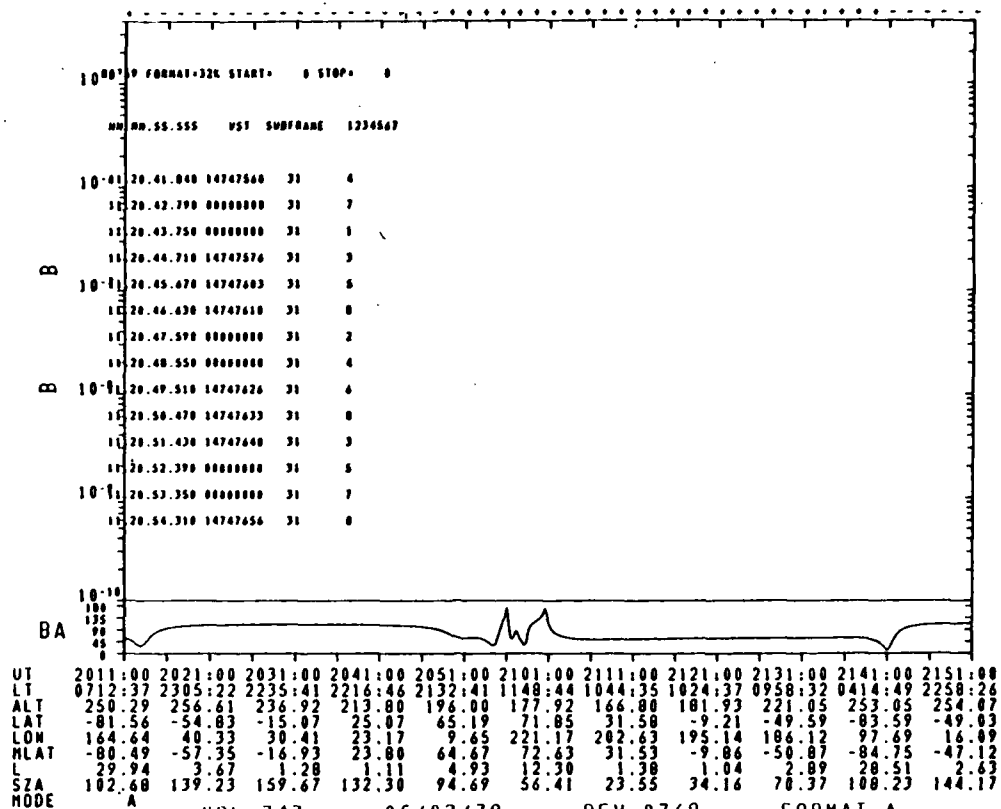
NRL 747

05/02/78

REV 0763

FORMAT C



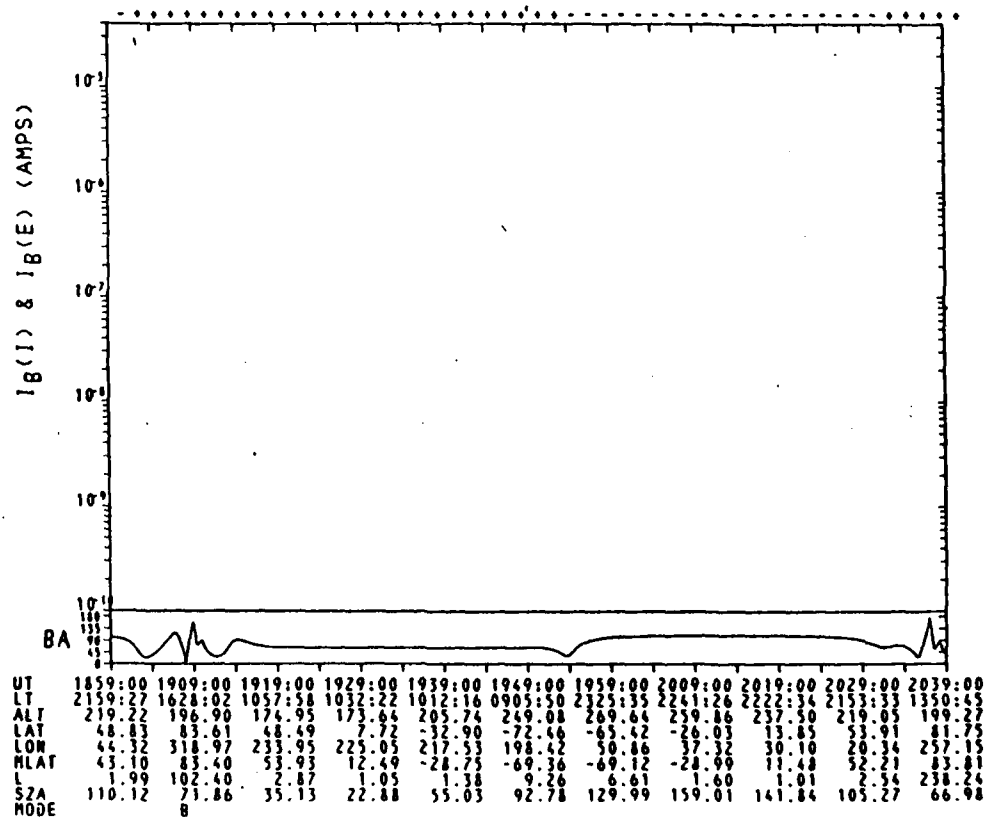
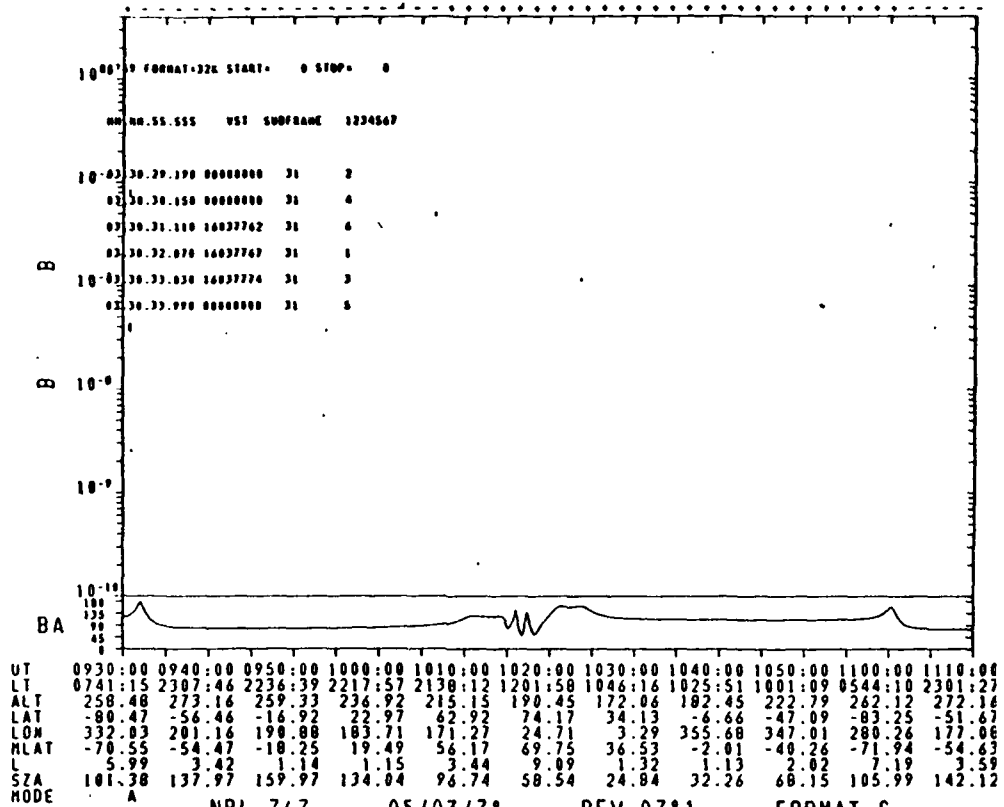


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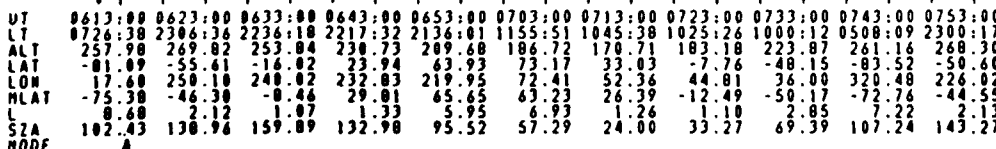
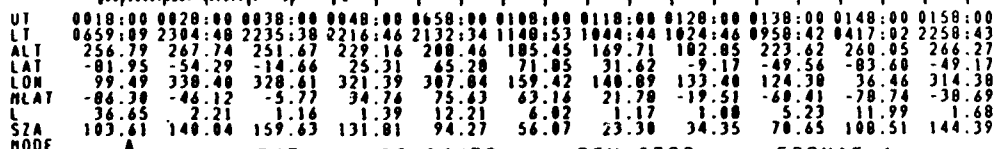
05/03/78

REV 0774

FORMAT A





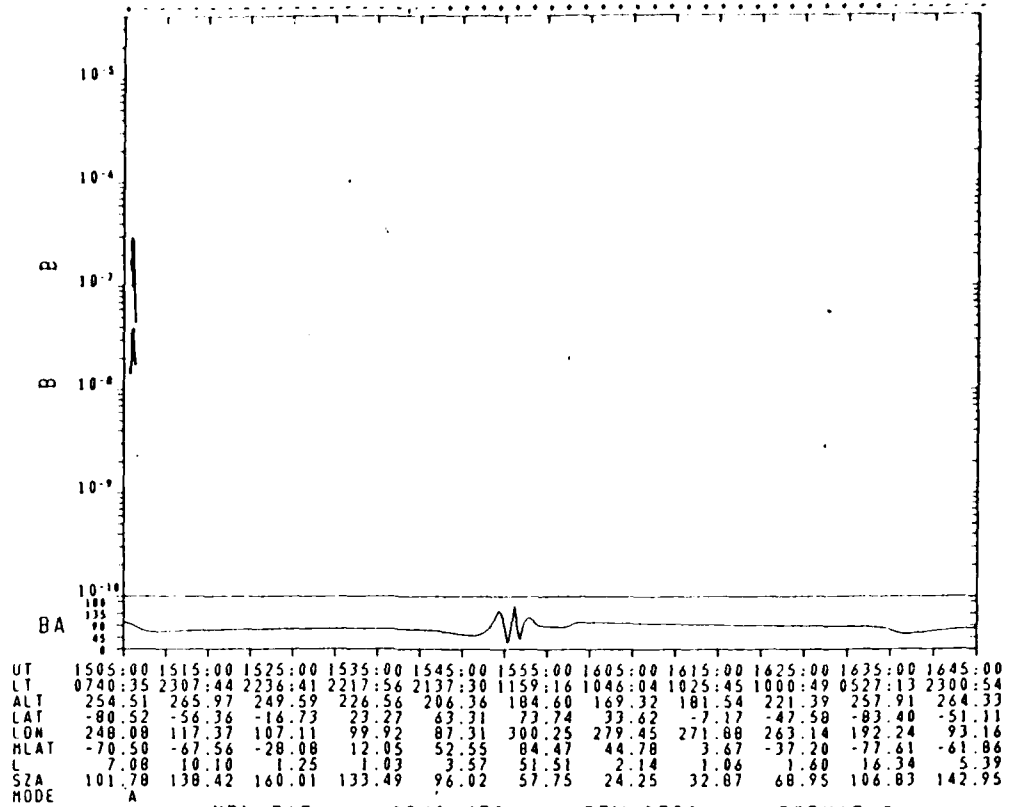


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05/04/78

REV 0794

FORMAT A

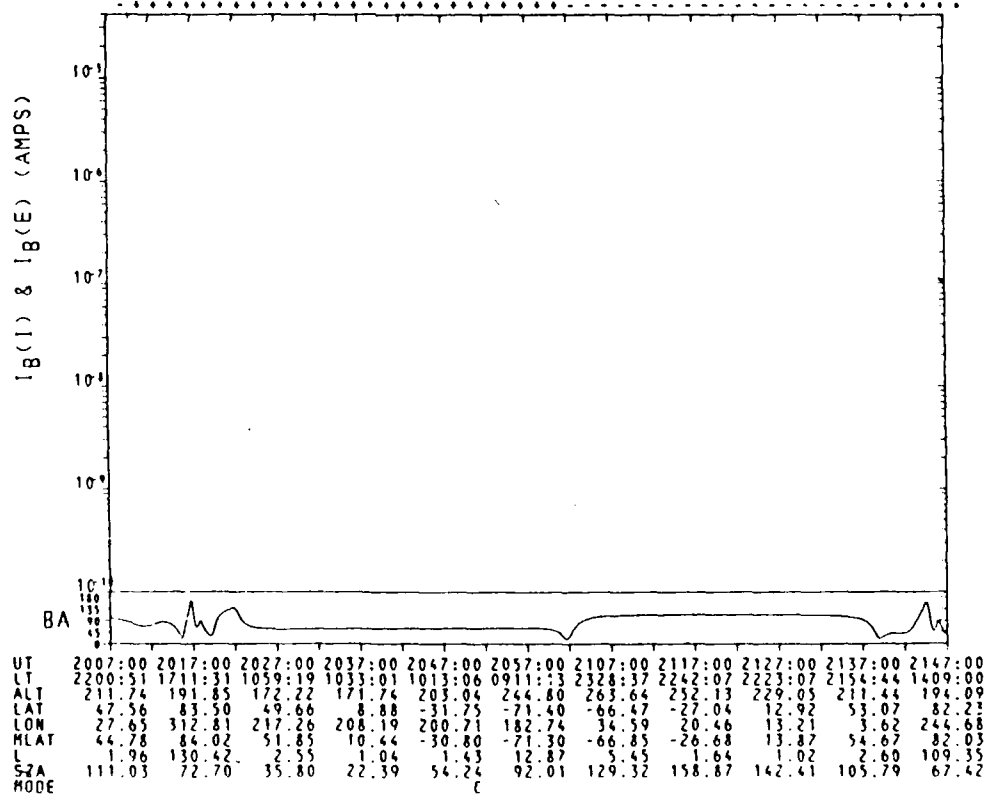


NRL 747

05/04/78

REV 0798

FORMAT C

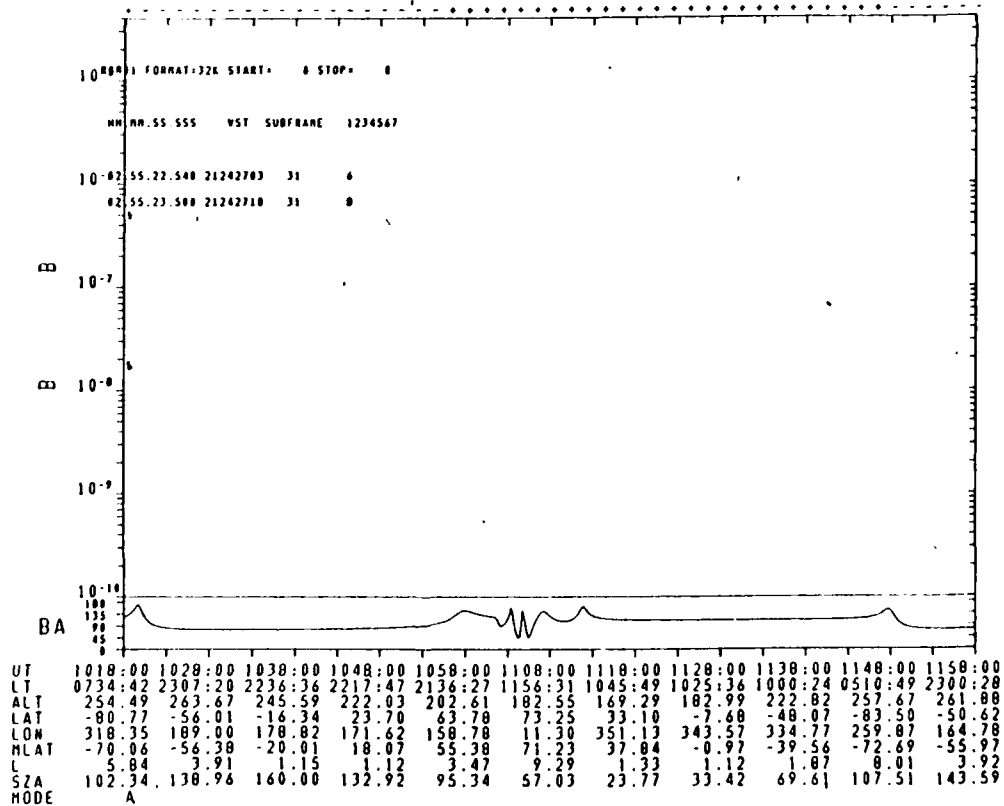
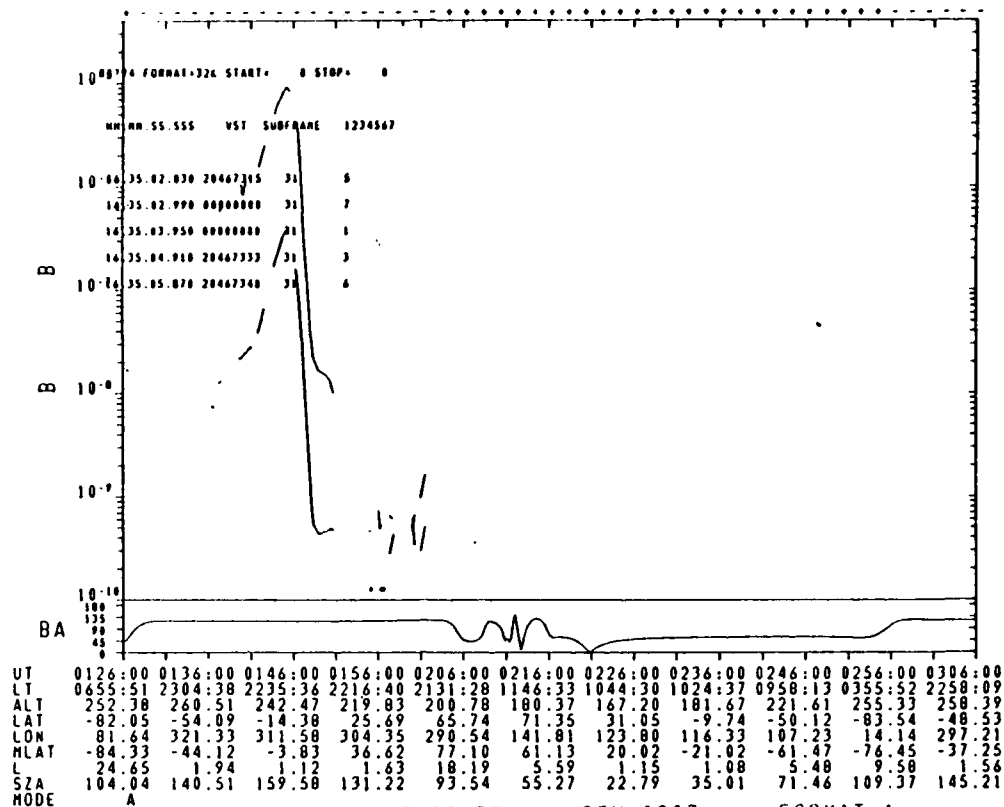


NRL 747

05/05/78

REV 0801

FORMAT A

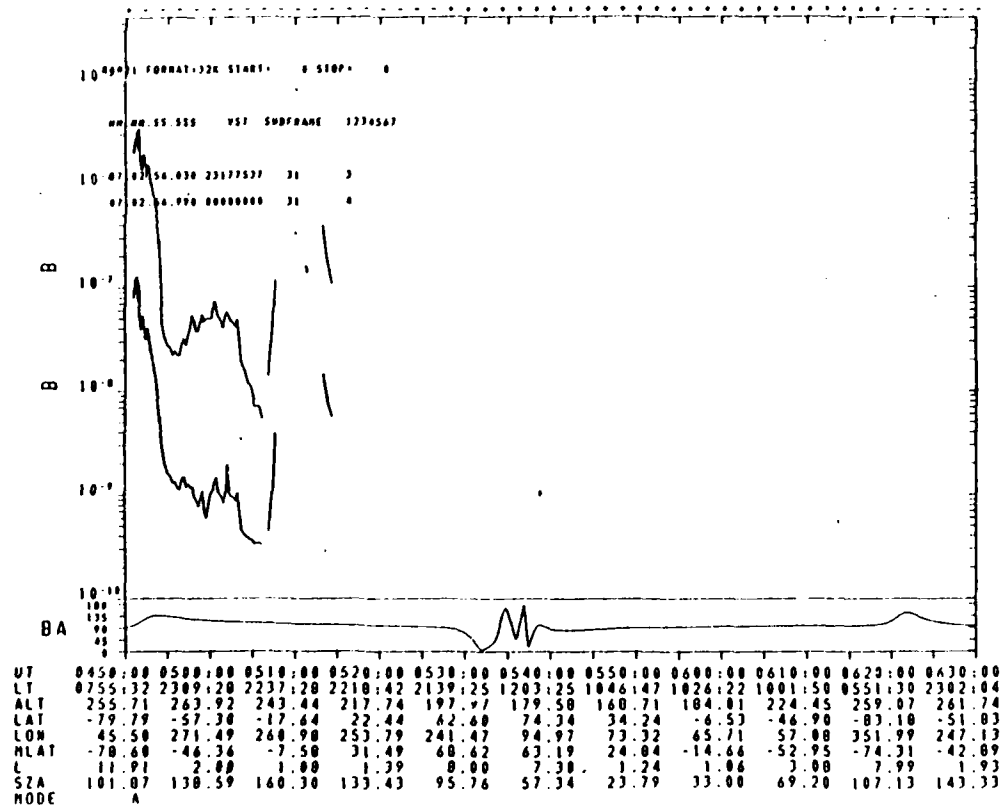
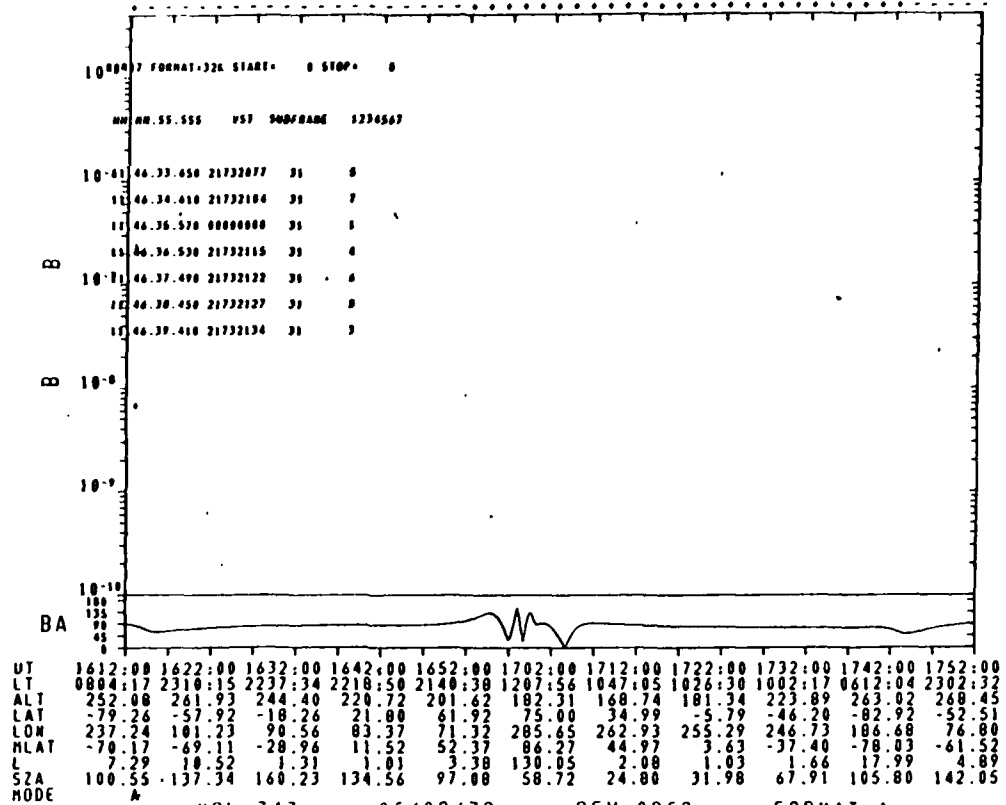


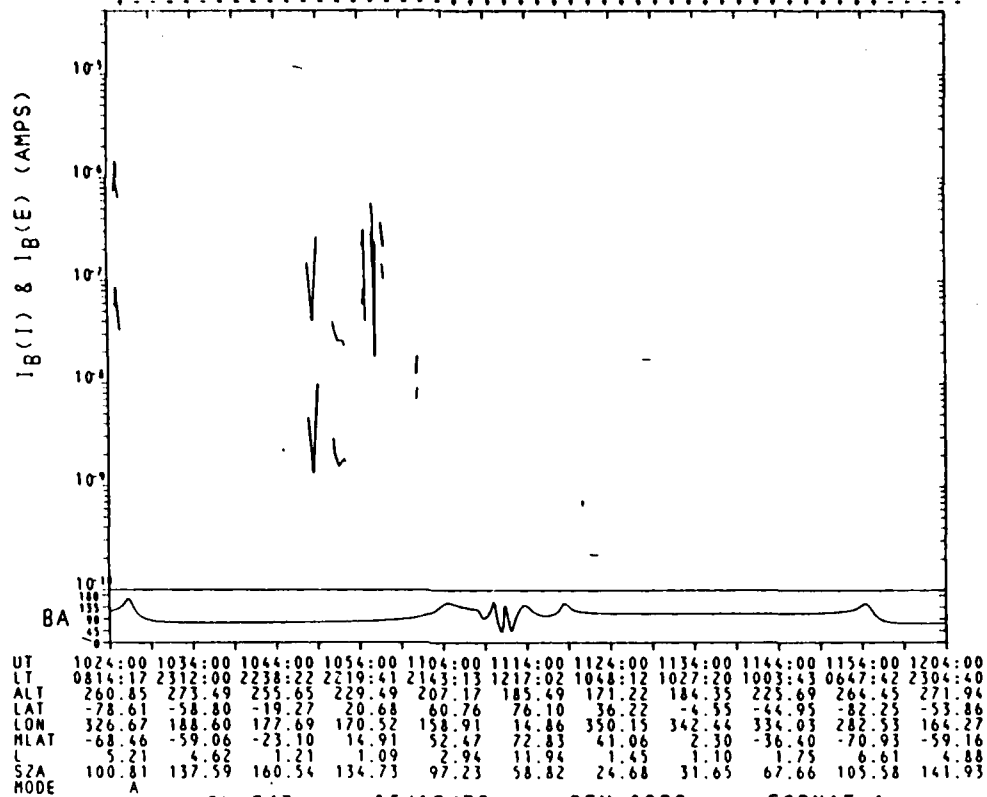
NRL 747

05/05/78

REV 0811

FORMAT A



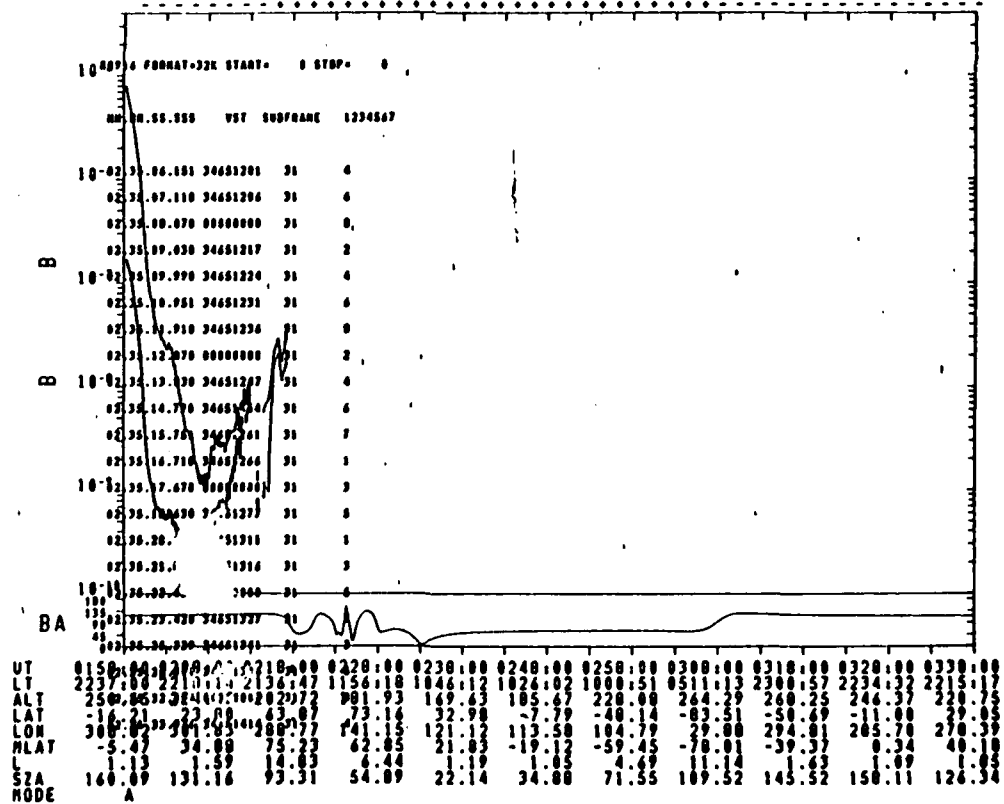


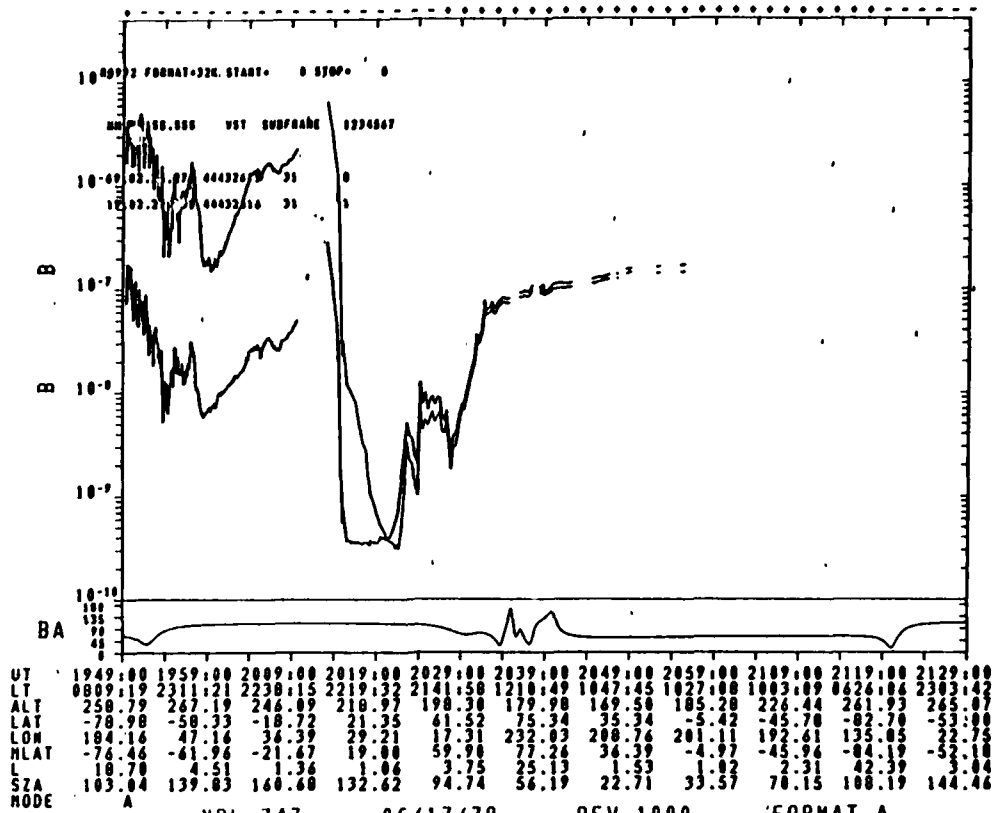
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05/13/78

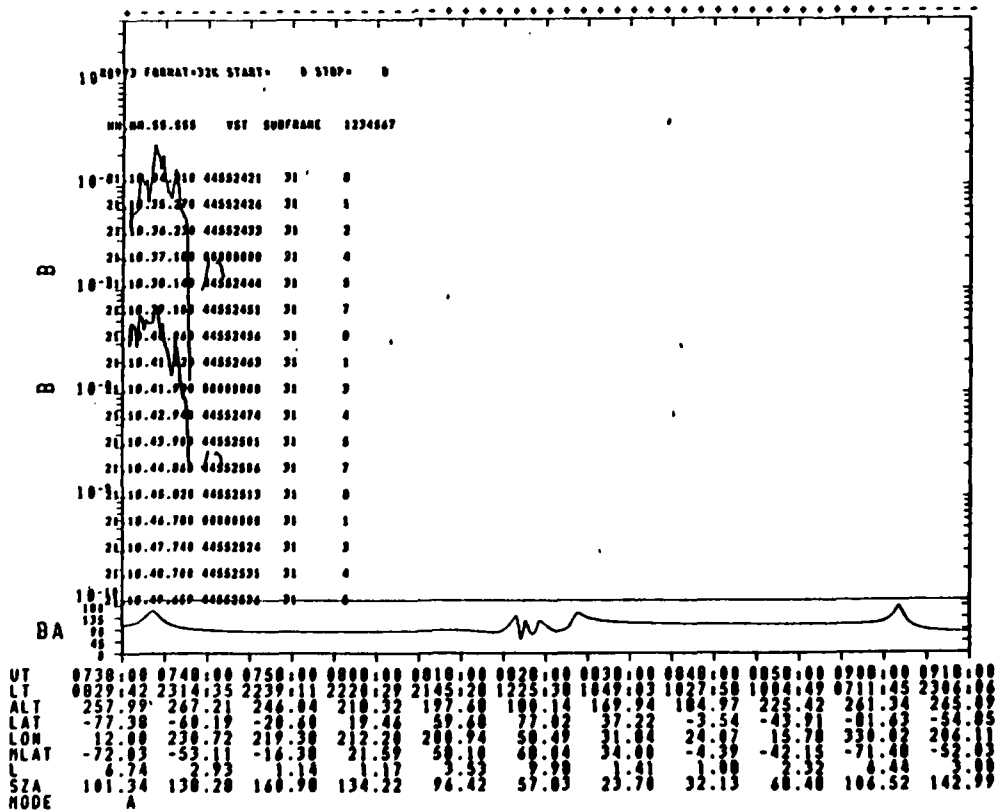
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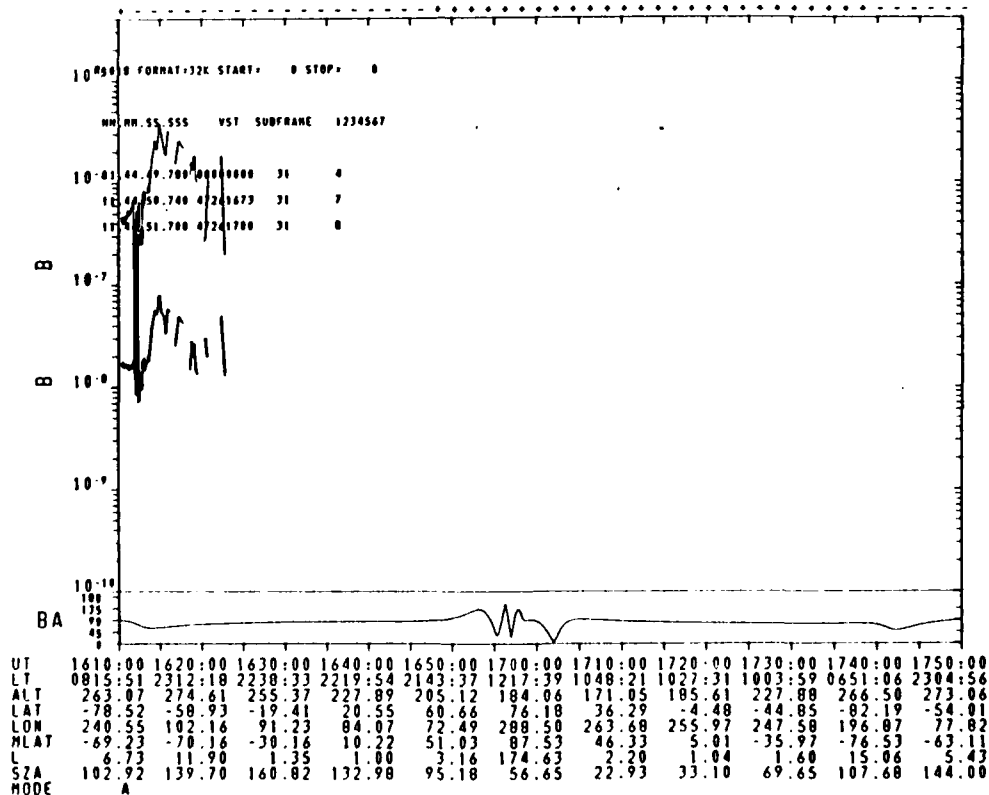
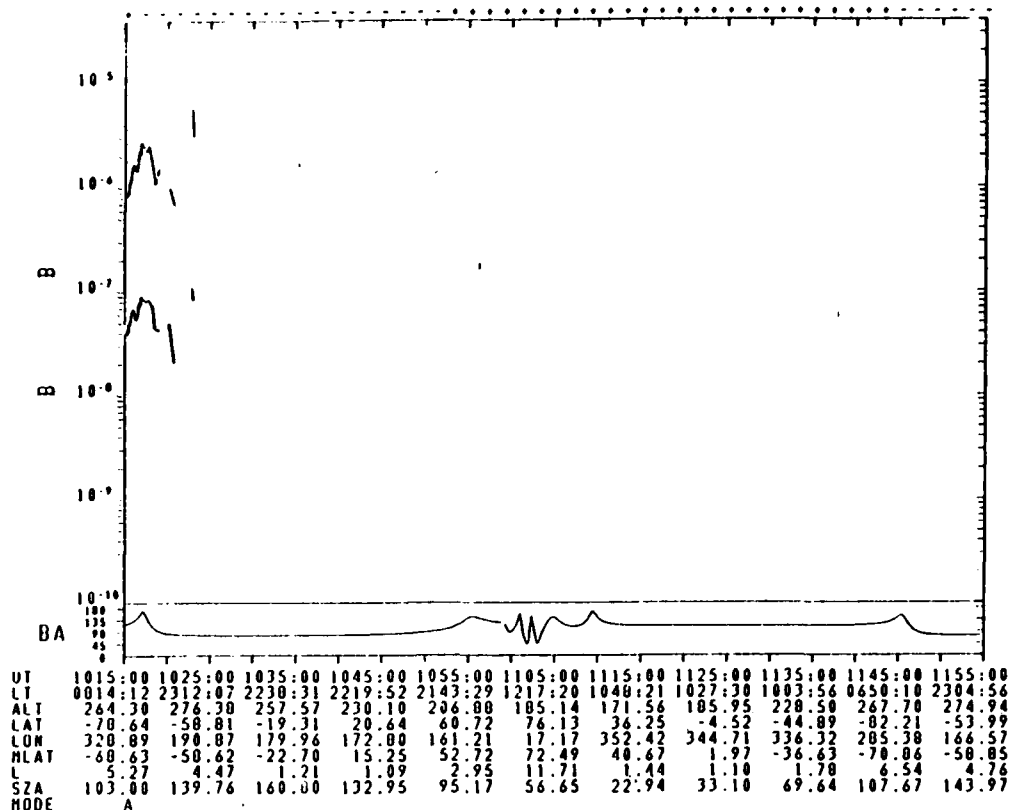




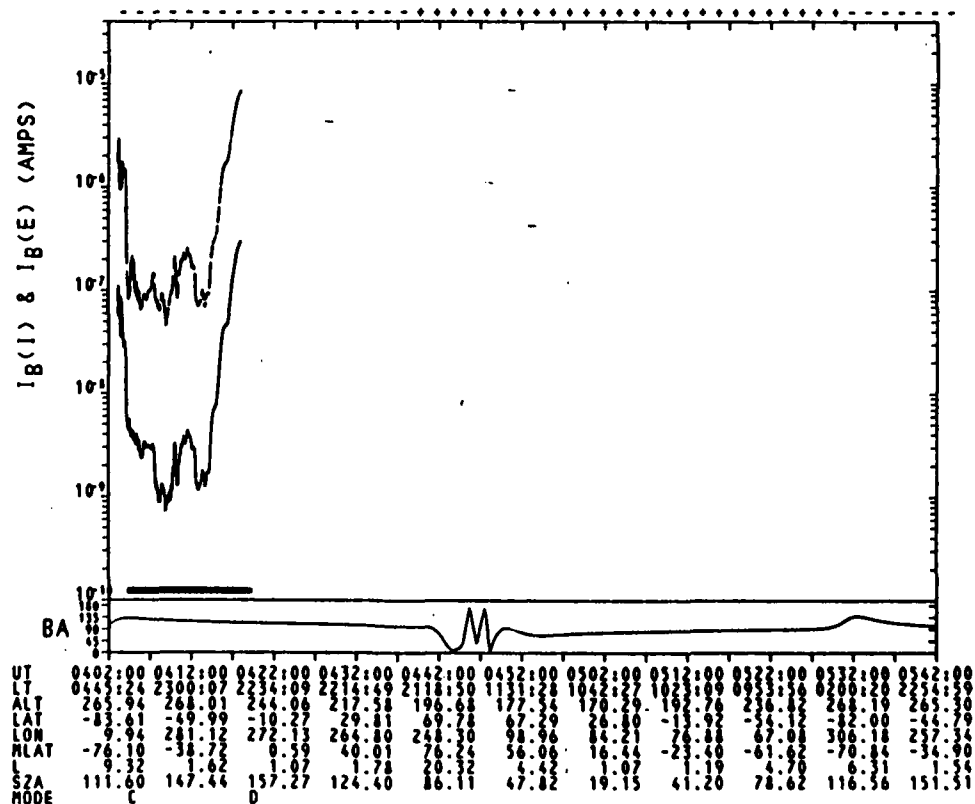
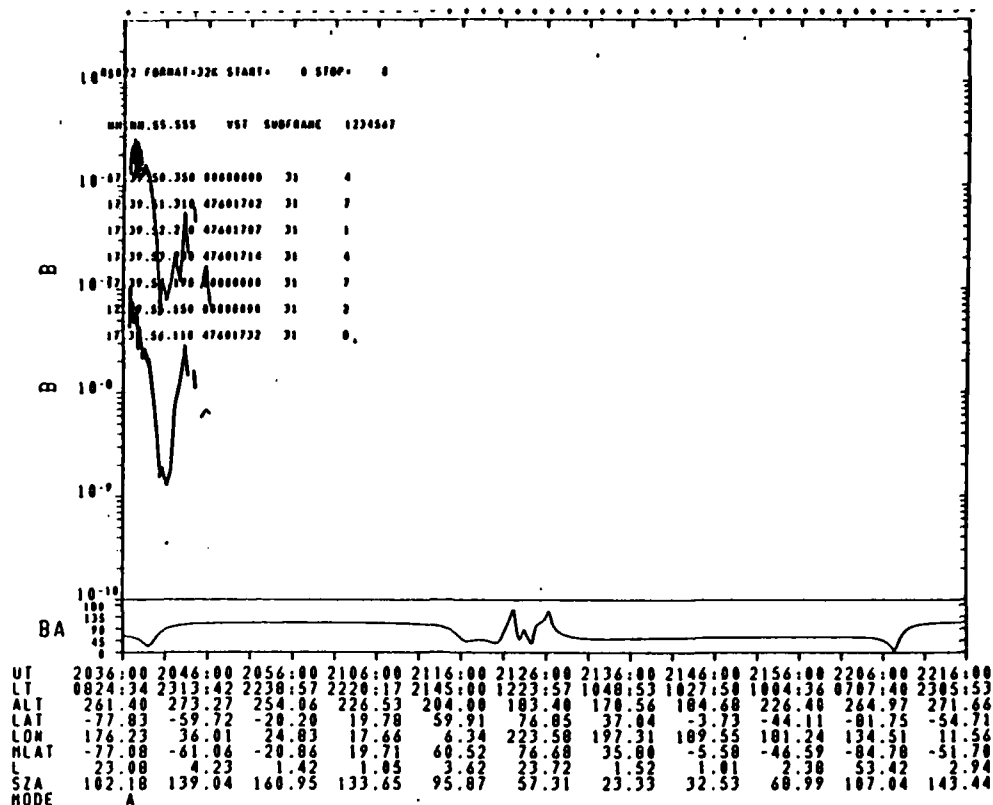
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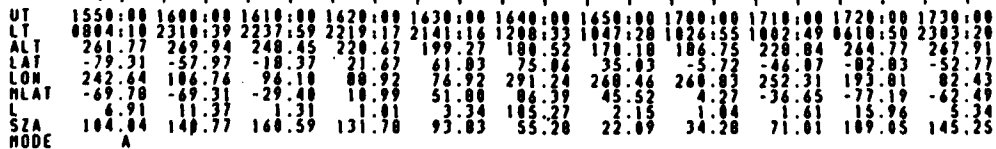
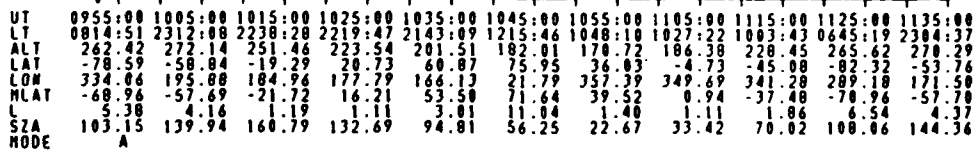










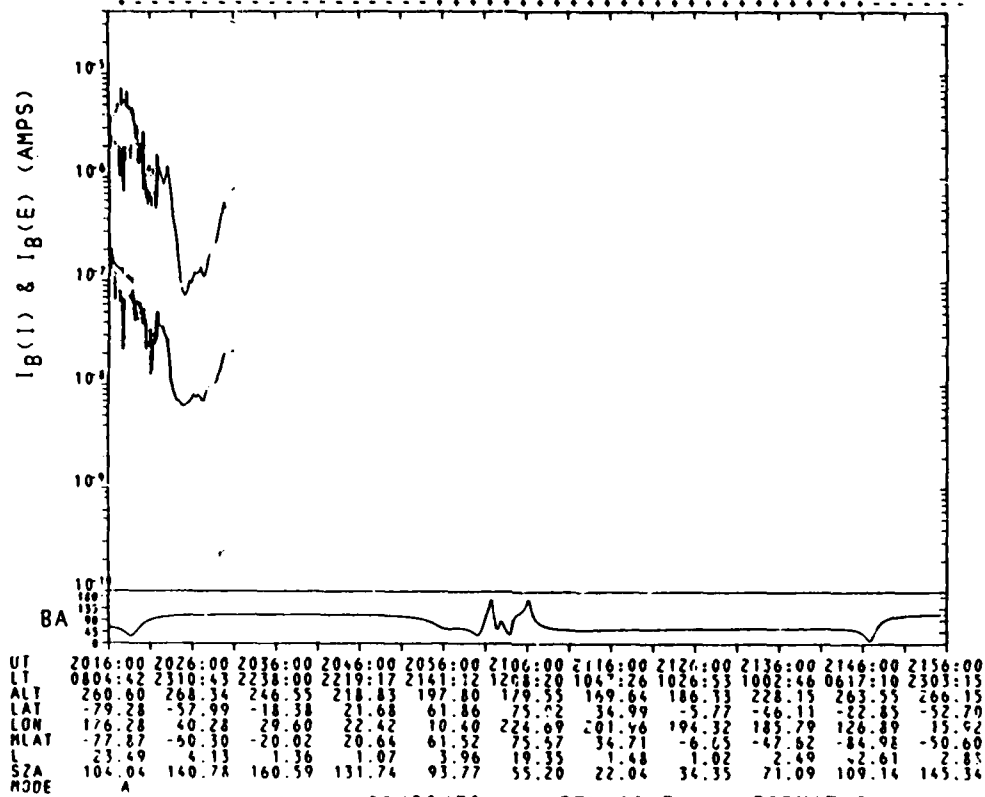


NRL 747

05/19/78

REV 1041

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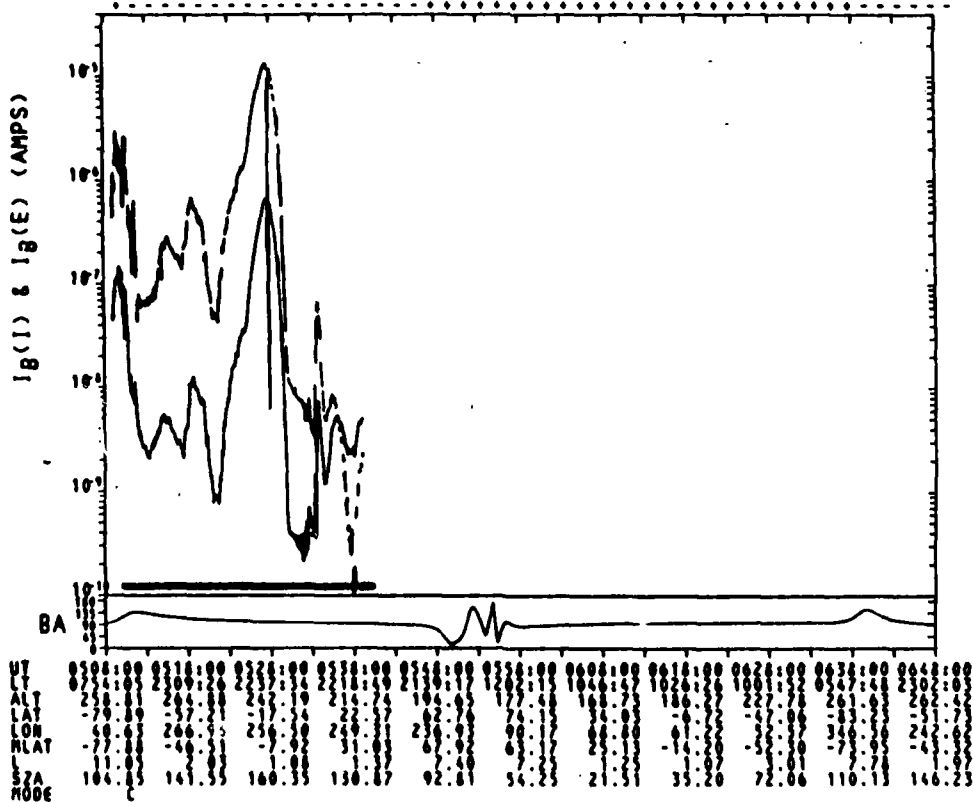


NRL 747

05/20/78

REV 1047

FORMAT C

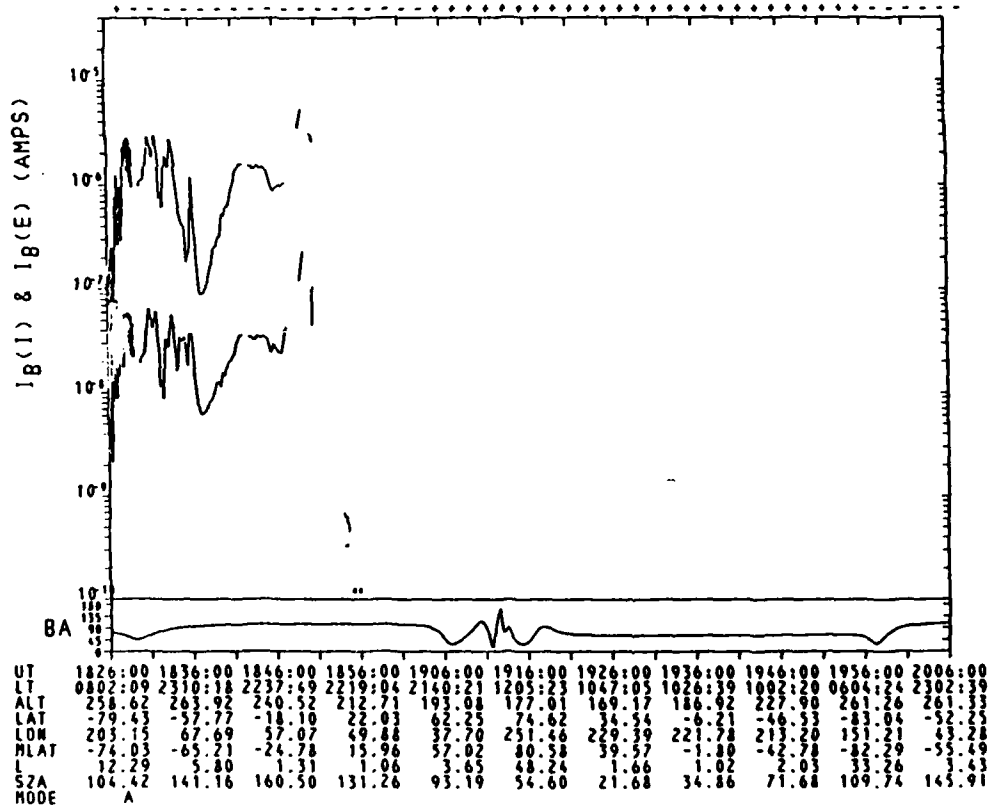
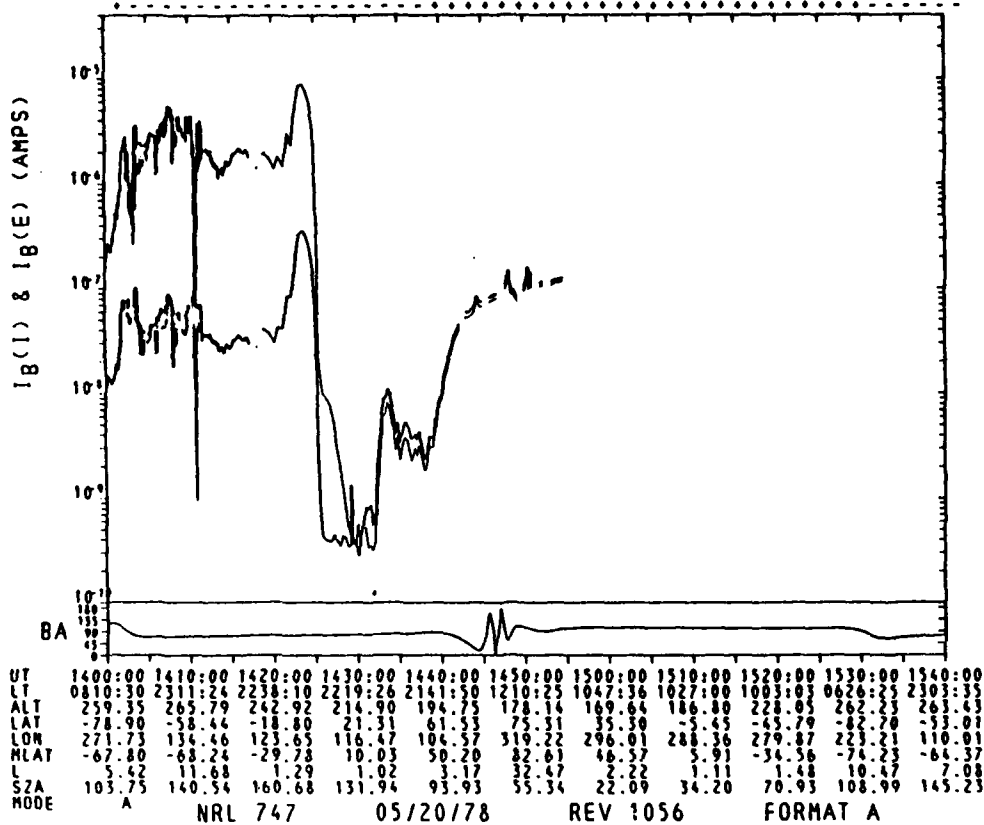


NRL 747

05/20/78

REV 1053

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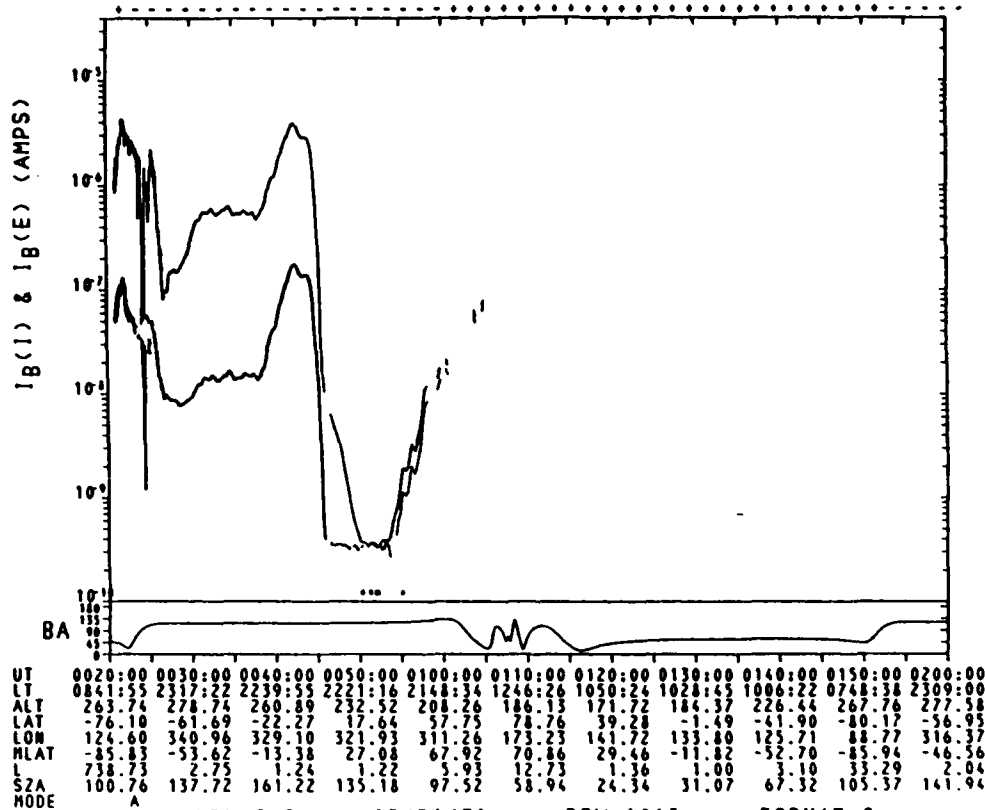


NRL 747

05/21/78

REV 1060

FORMAT A

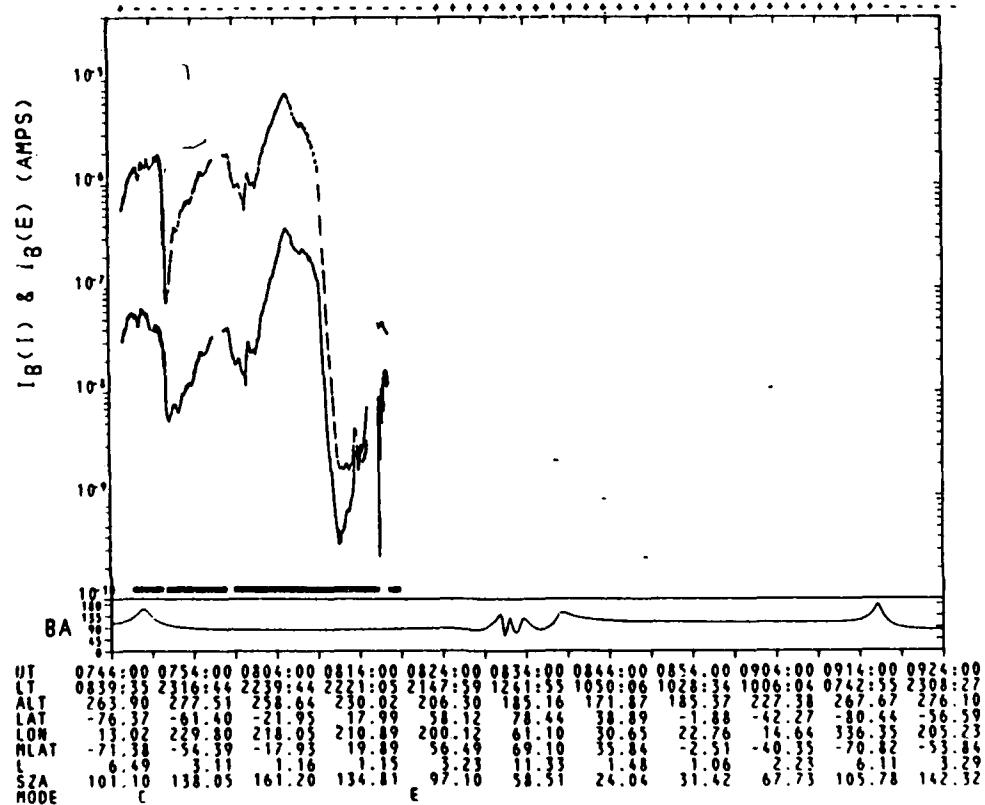


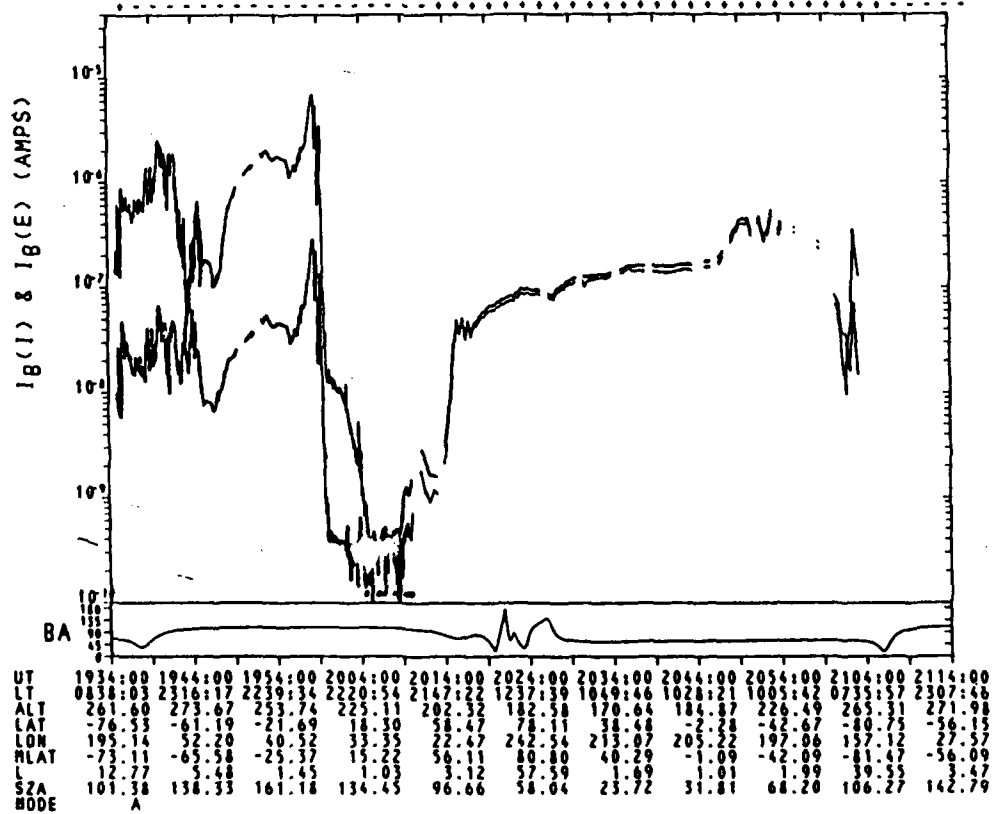
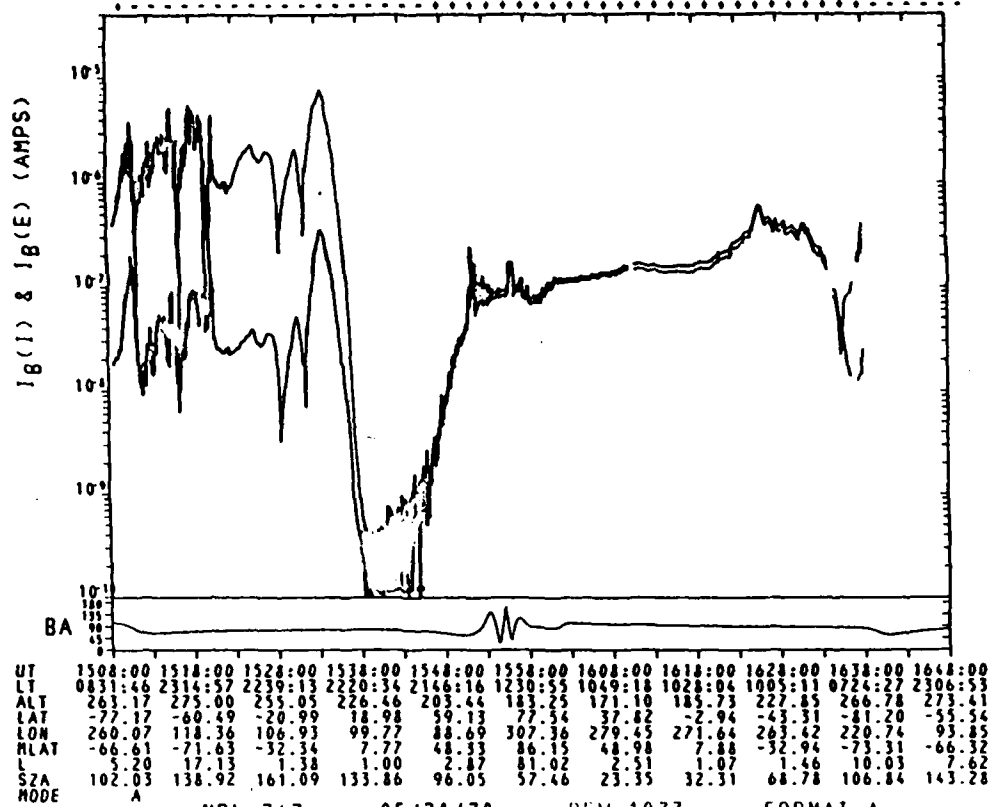
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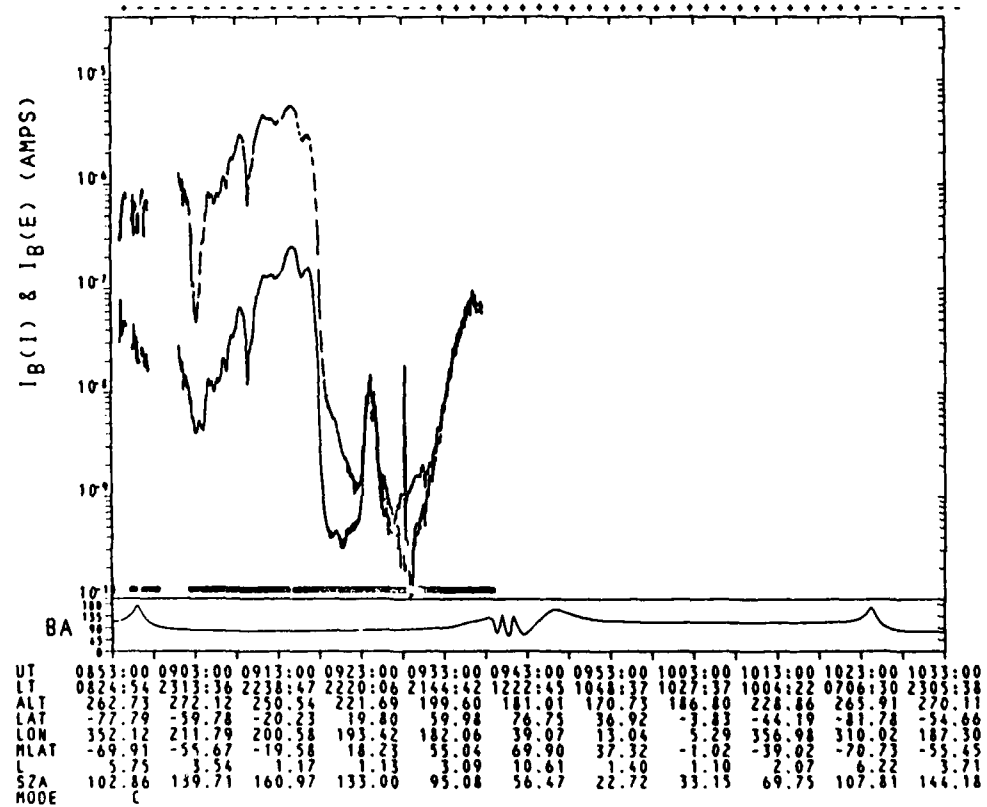
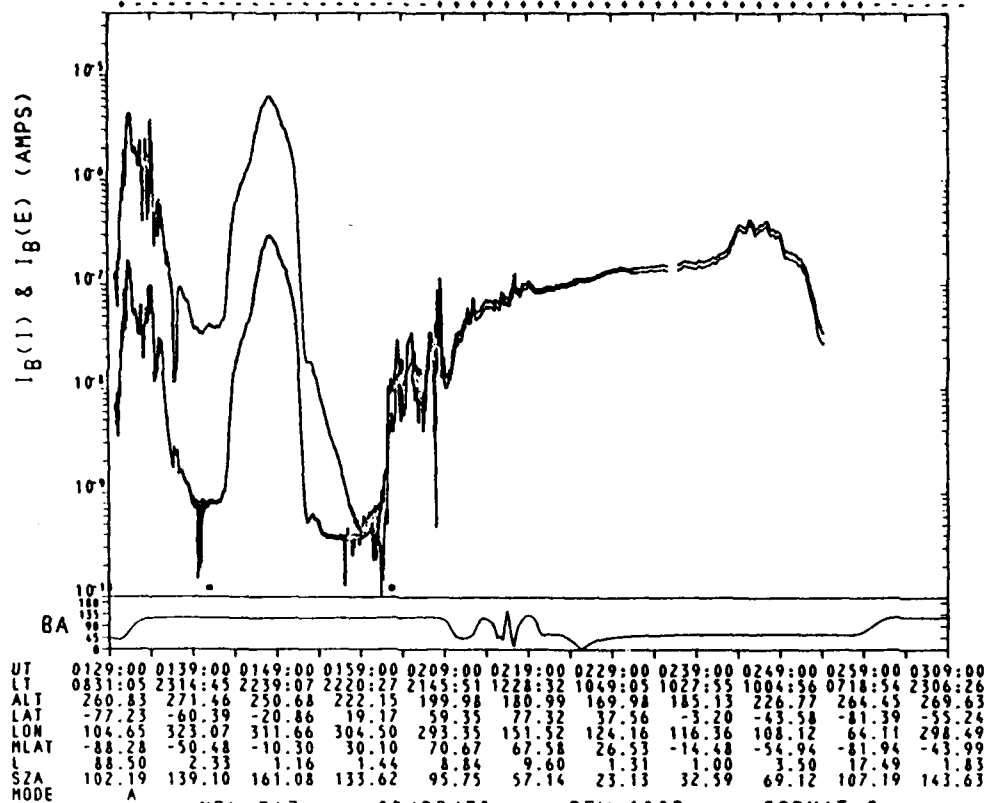
05/21/78

REV 1065

FORMAT C





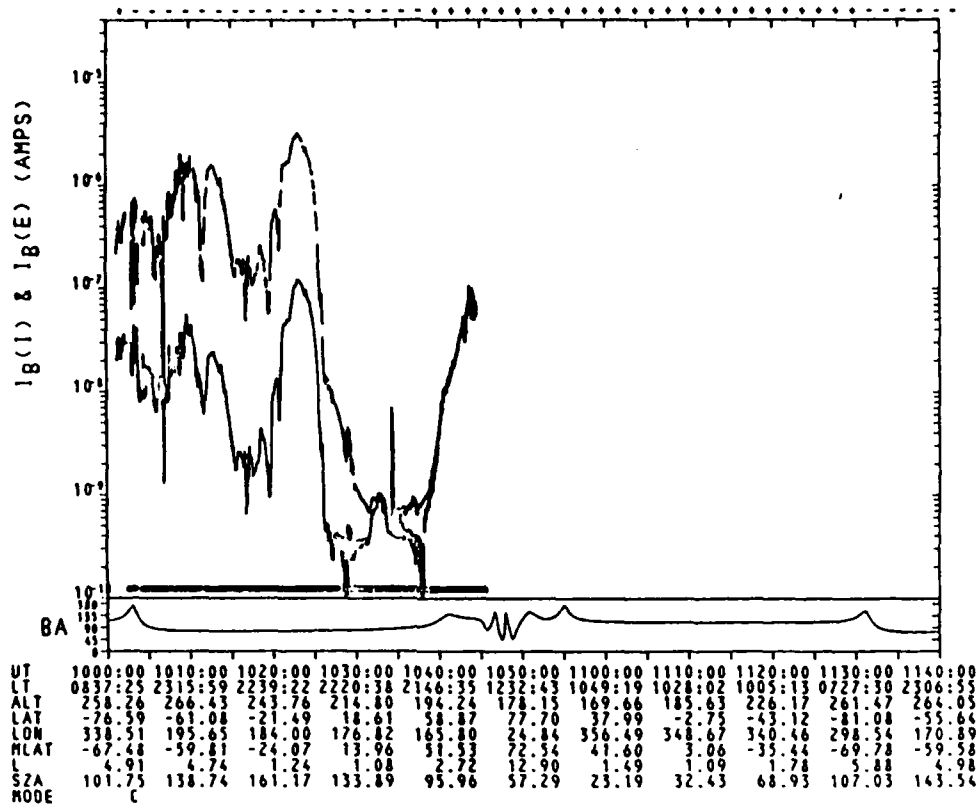


NRL 747

05/23/78

REV 1099

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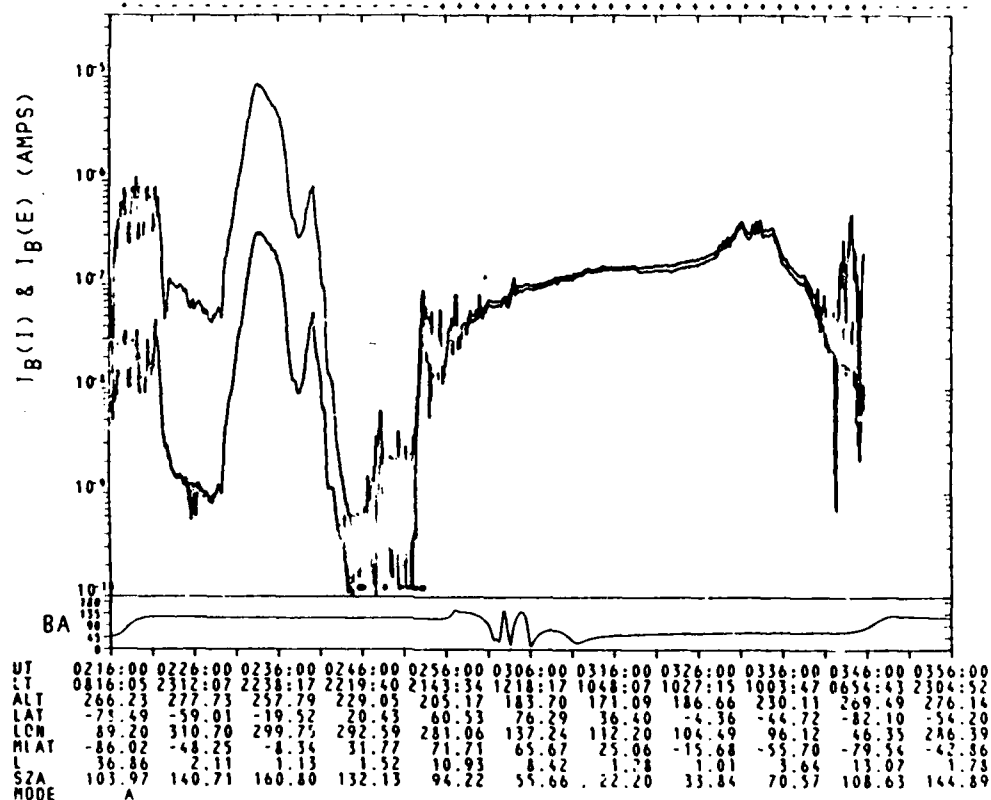


NRL 747

05/24/78

REV 1110

FORMAT A



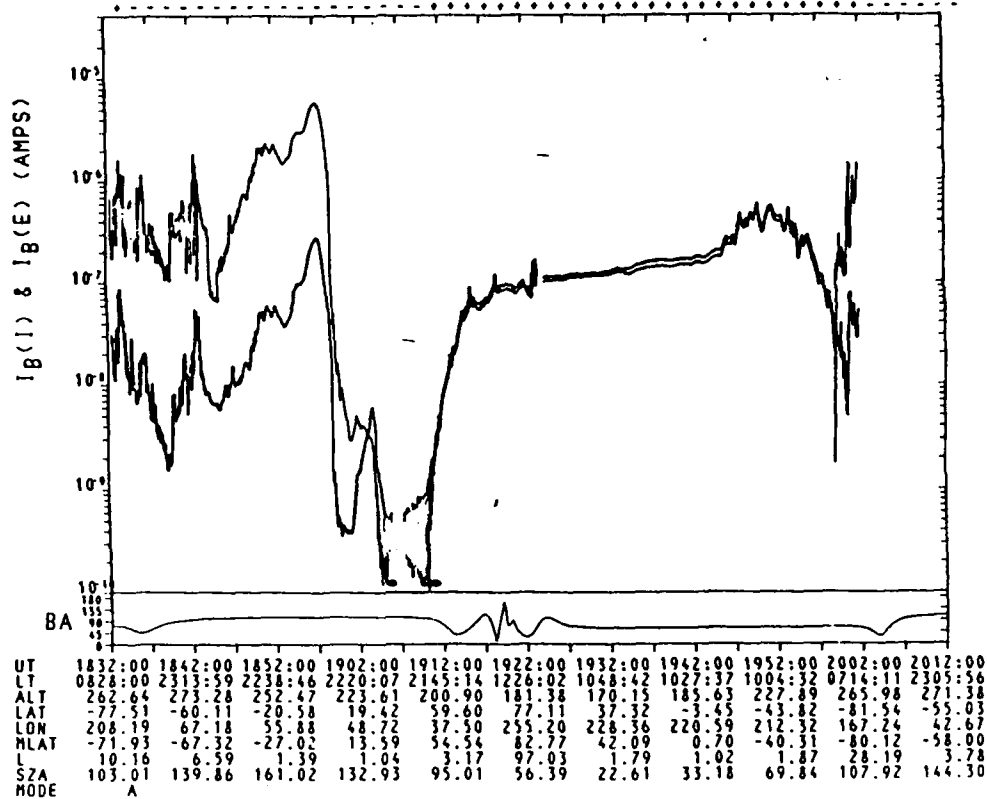


NRL 747

05/24/78

REV 1121

FORMAT A

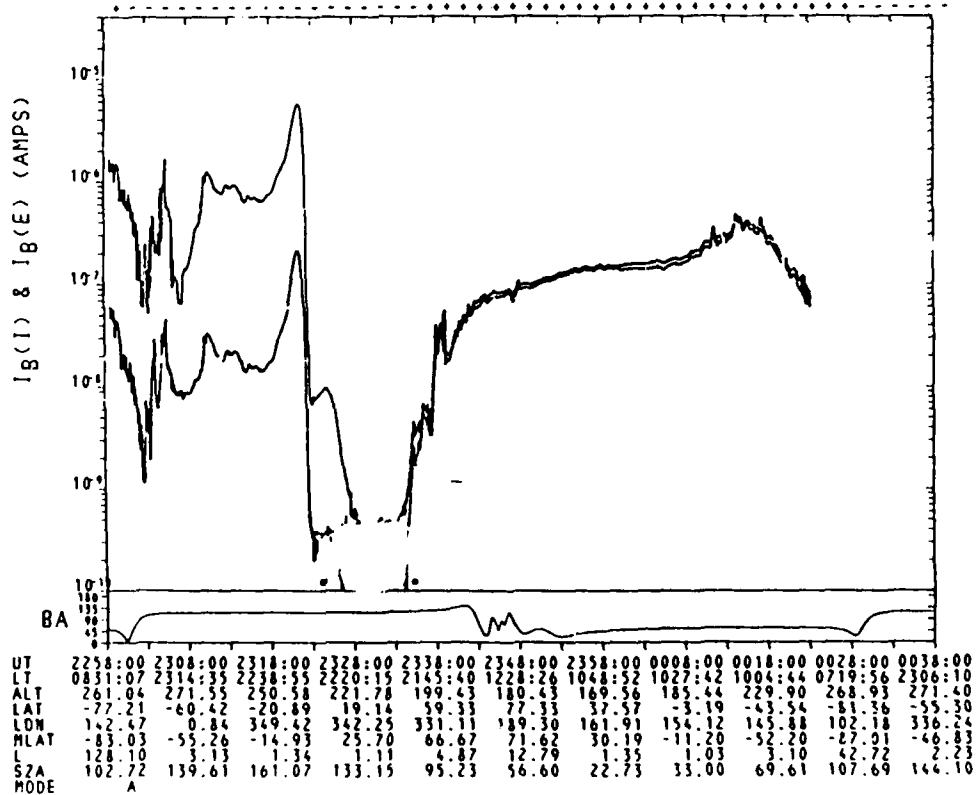


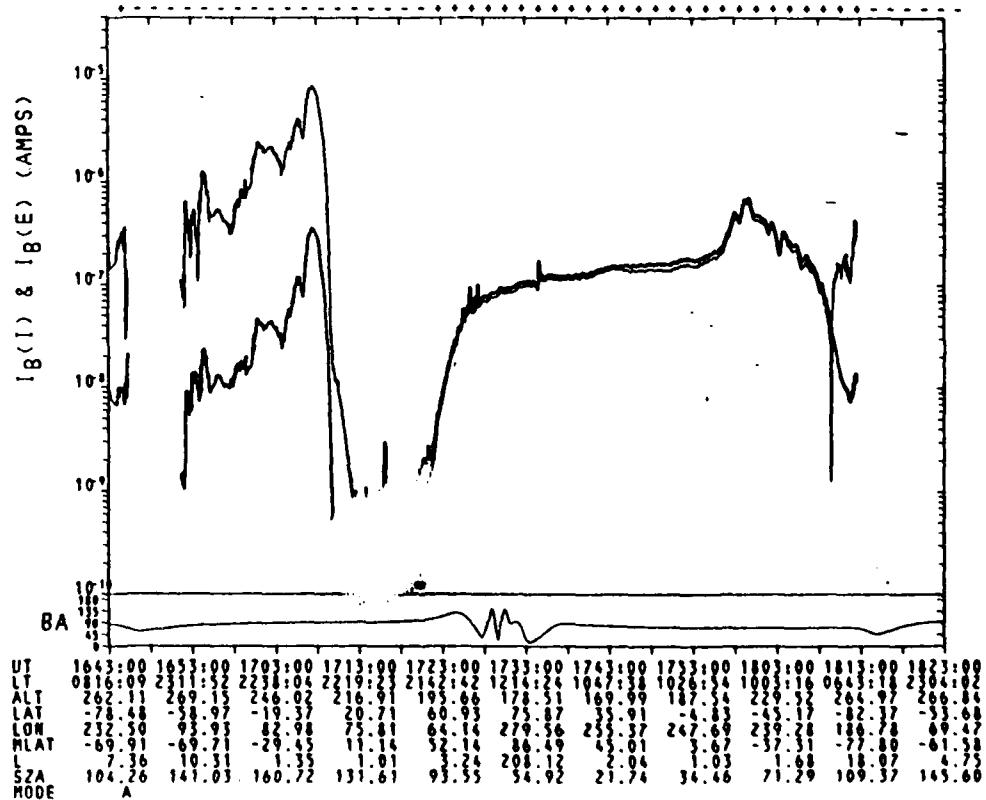
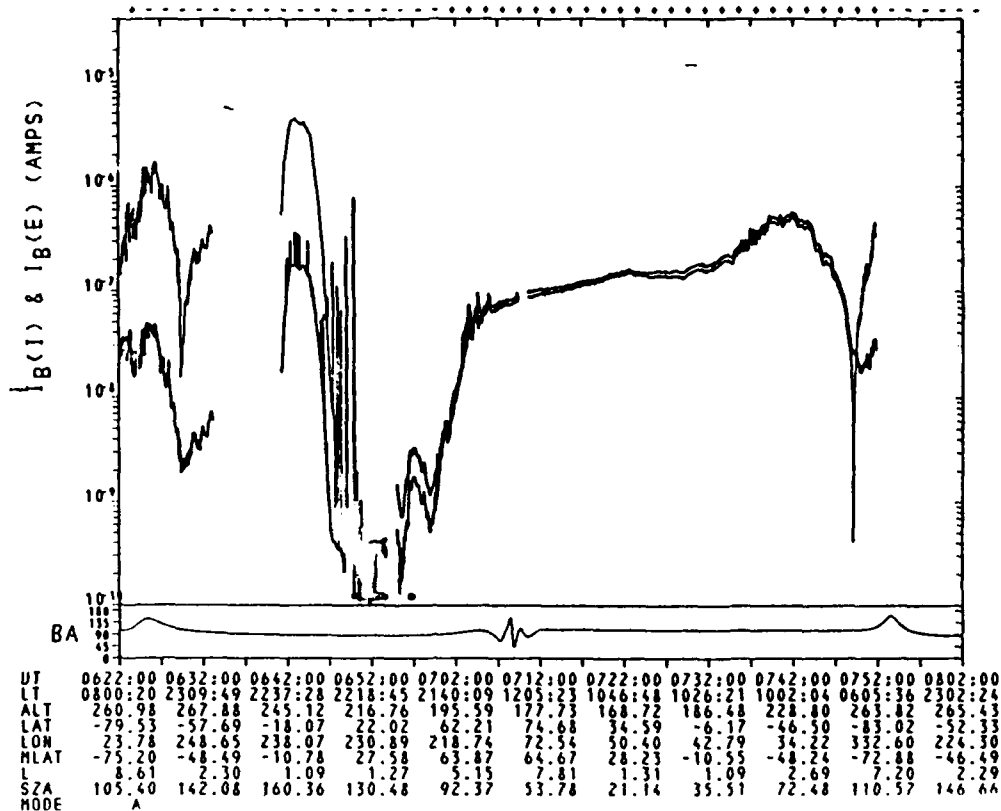
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05/24/78

REV 1124

FORMAT A



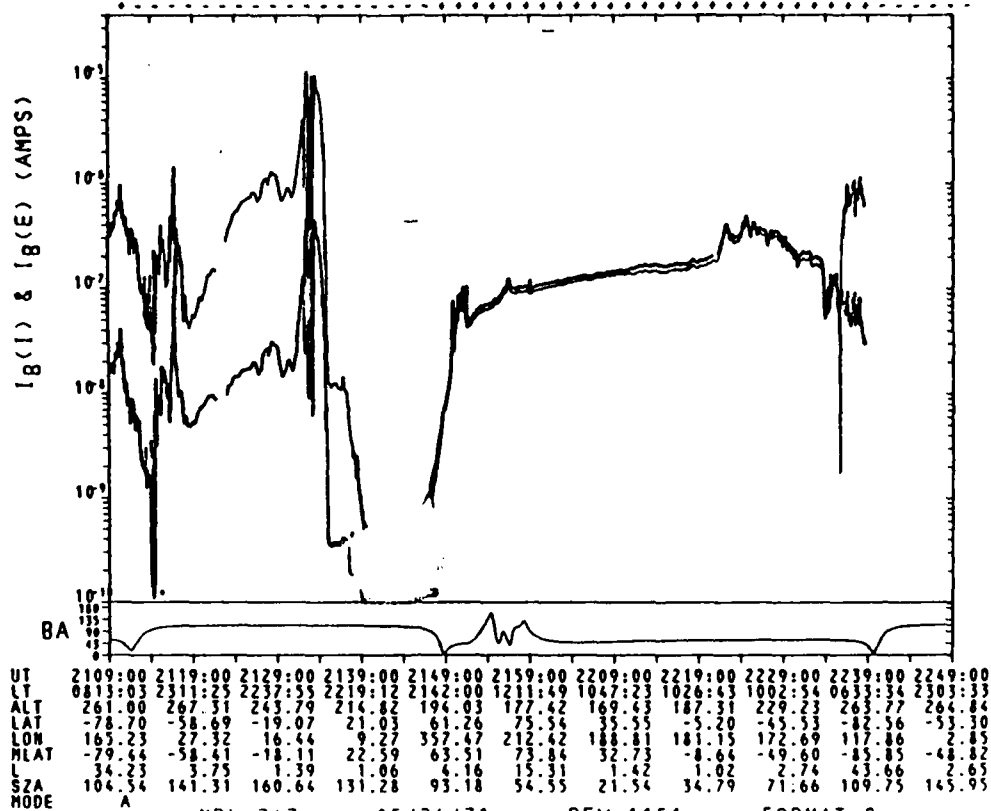


NRL 747

05/25/78

REV 1139

FORMAT A

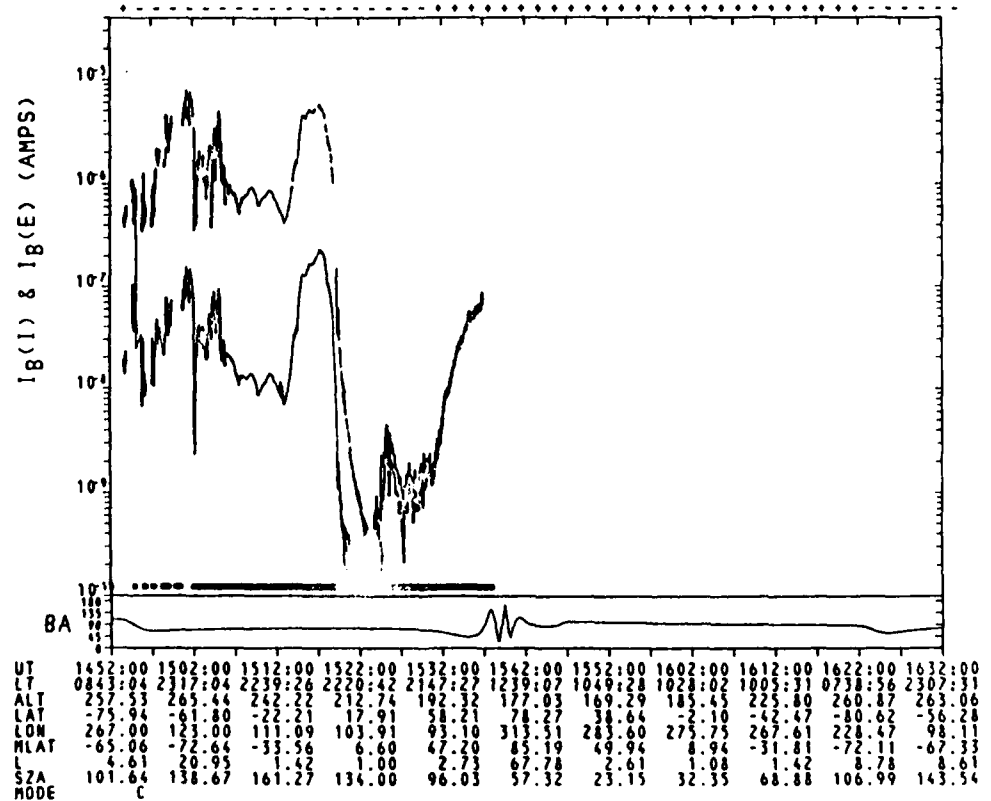


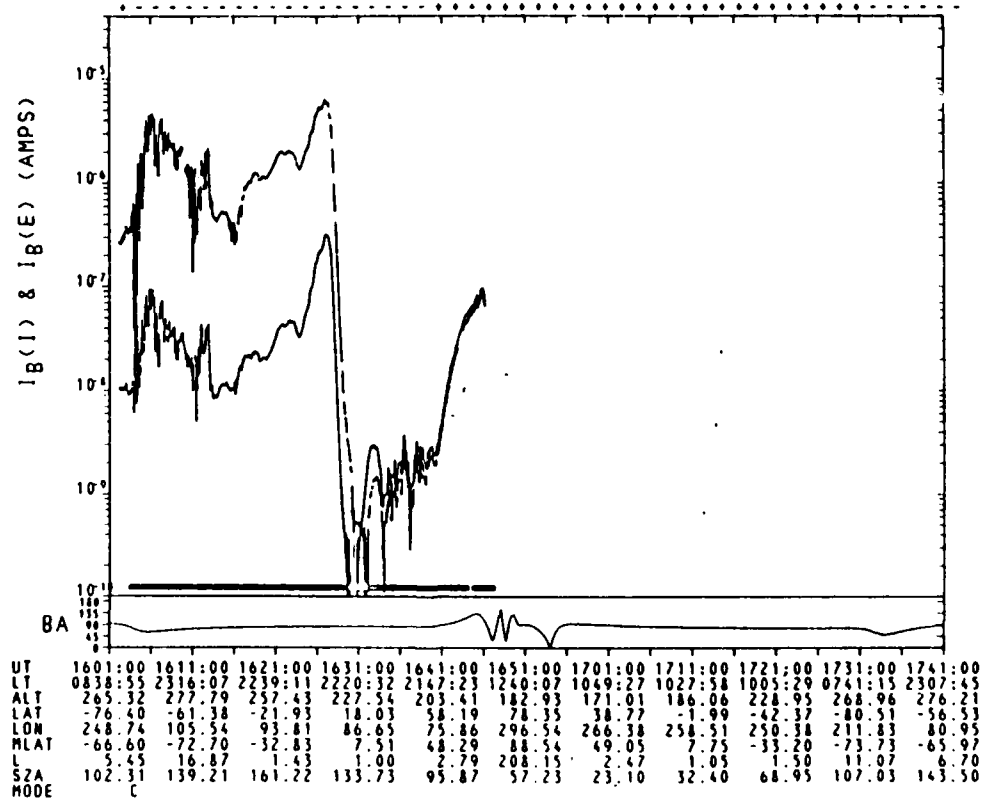
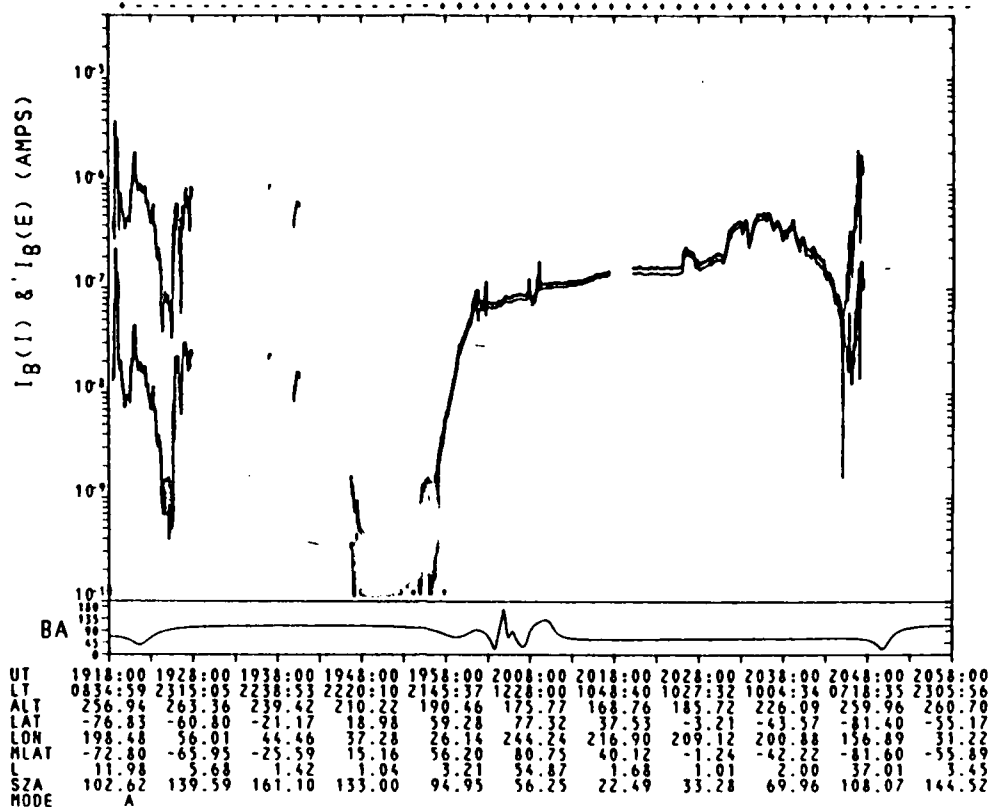
NRL 747

05/26/78

REV 1151

FORMAT C



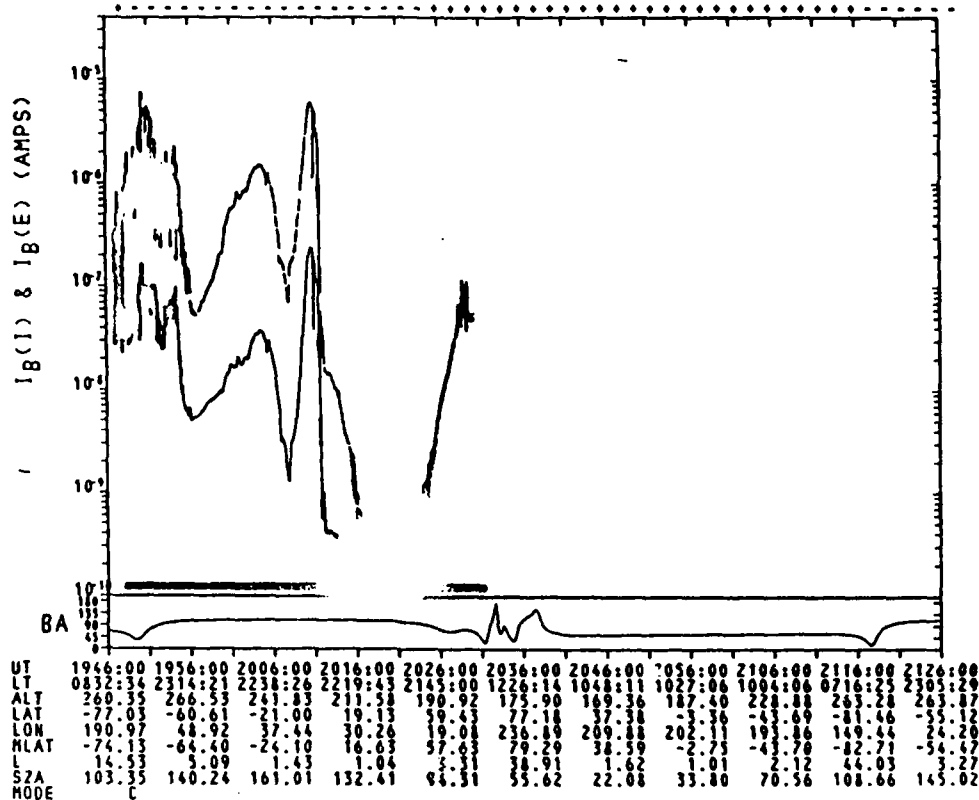


NRL 747

05/29/78

REV 1203

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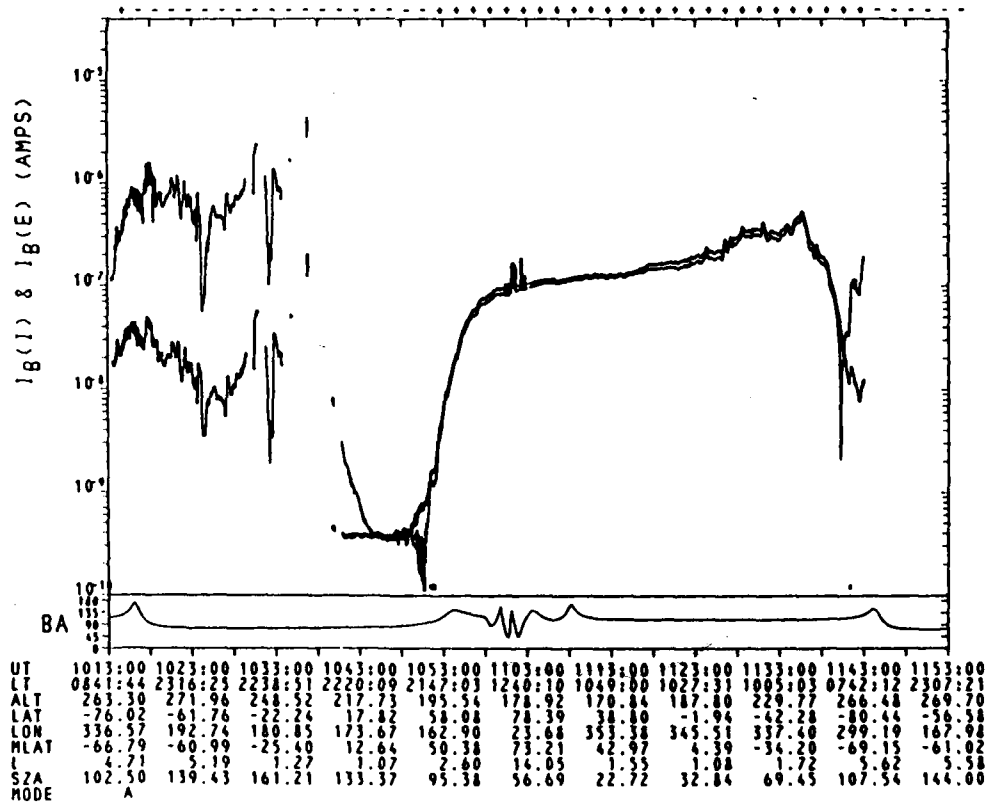


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05/31/78

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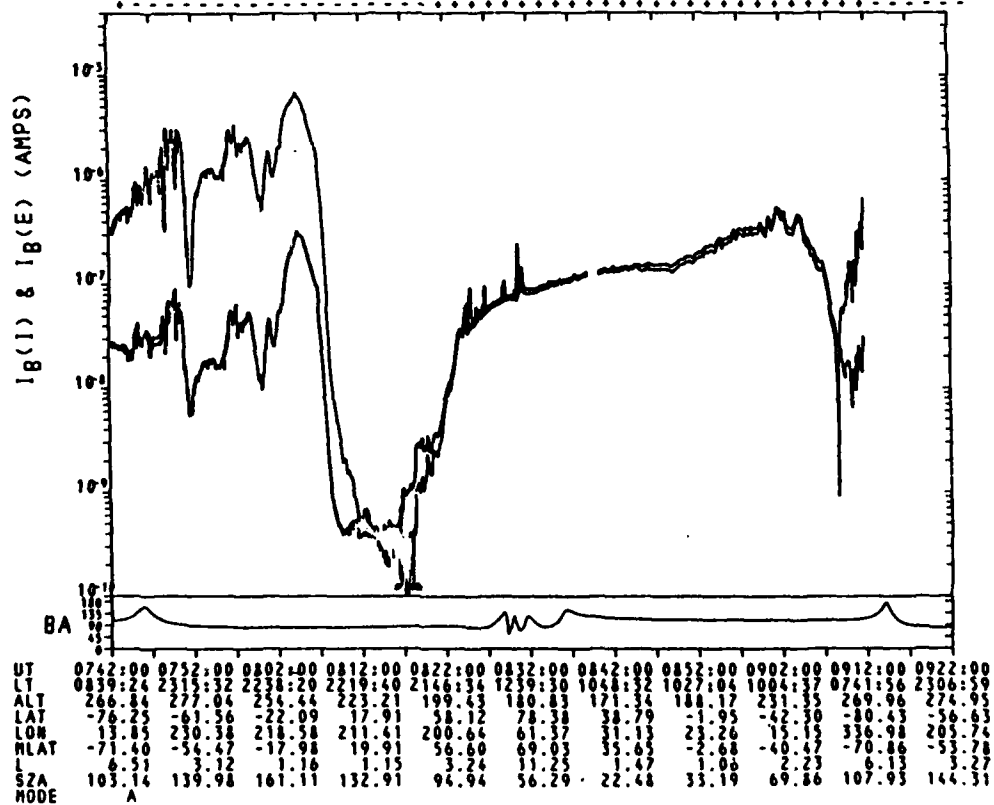
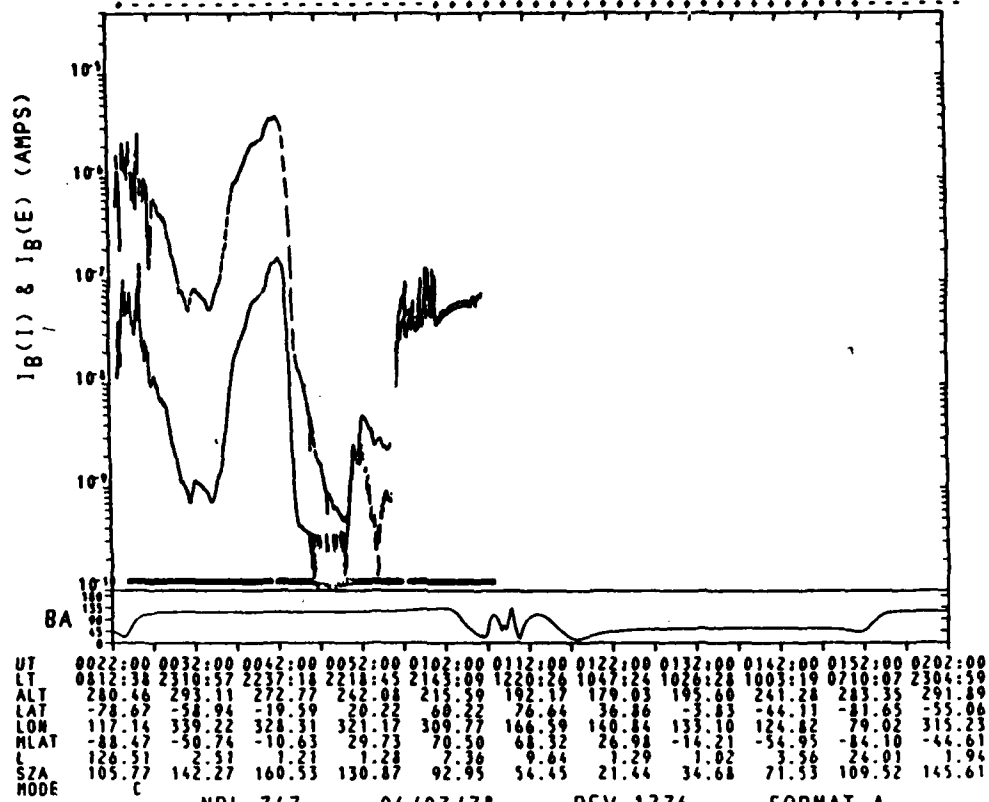


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06/03/78

REV 1271

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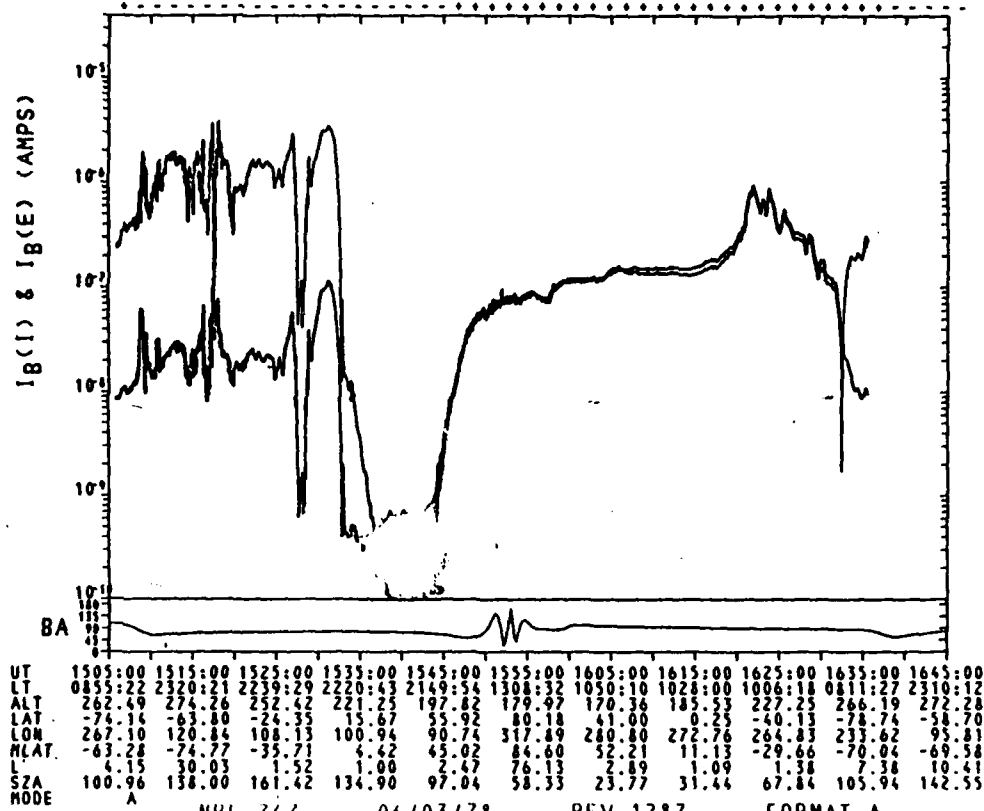


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06/03/78

REV 1281

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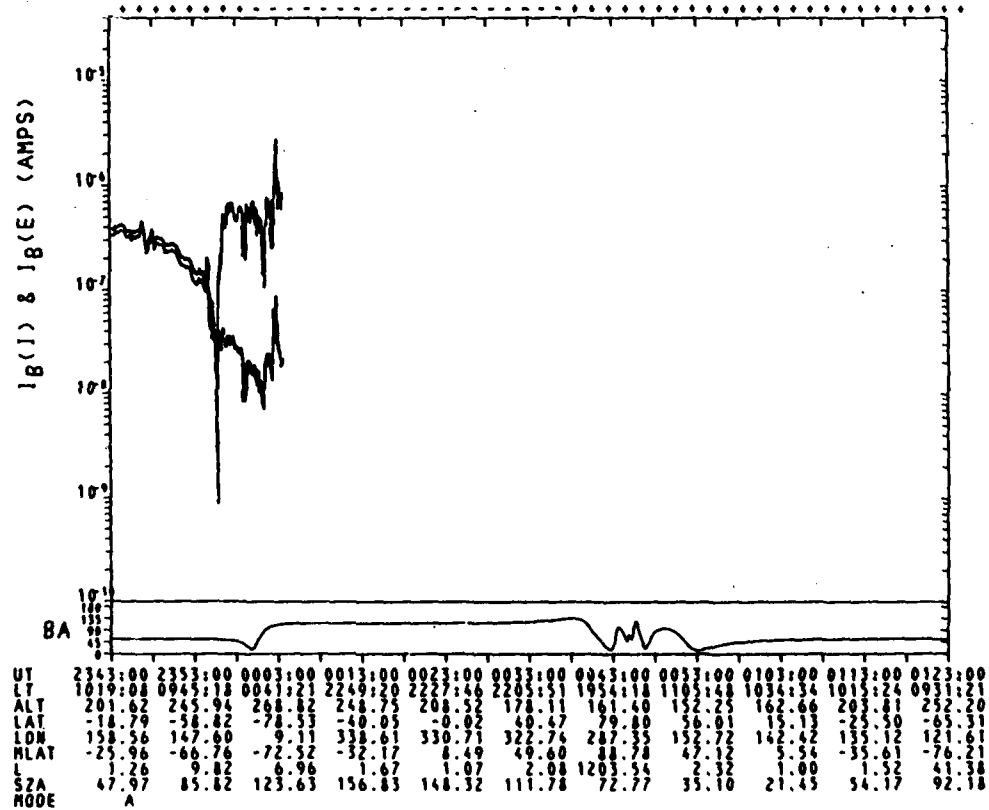


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06/03/78

REV 1287

FORMAT A



NRL 747

06/04/78

REV 1290

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

UT	0409:00	0419:00	0429:00	0439:00	0449:00	0459:00	0509:00	0519:00	0529:00	0539:00	0549:00
LT	1018:49	0944:20	0035:00	2248:56	2227:37	2205:46	1954:59	1100:19	1034:56	1015:52	0932:46
ALT	201.41	245.19	268.74	256.40	225.66	199.98	182.58	169.65	174.13	207.12	249.96
LAT	-19.37	-59.38	-78.04	-59.51	0.42	40.70	79.77	56.29	15.57	-25.02	-64.46
LOW	91.99	80.86	301.03	272.01	264.19	256.22	221.03	86.36	76.02	68.75	53.47
MLAT	-30.16	-68.73	-66.80	-28.60	10.68	49.85	77.49	45.66	4.01	-33.38	-69.53
L	1.33	8.15	4.78	1.35	1.08	2.51	32.53	2.51	1.00	1.54	6.93
SZA	48.52	86.39	124.19	157.17	147.97	111.55	72.79	35.31	21.21	53.72	91.74
MODE	A										

NRL 747

06/04/78

REV 1291

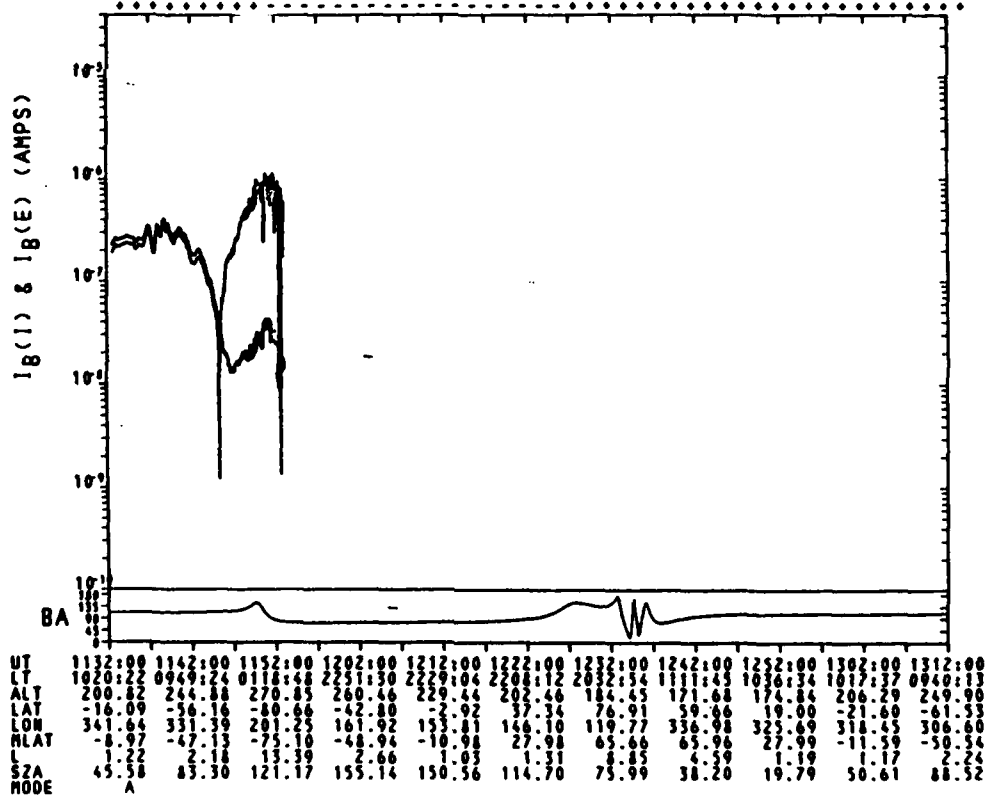
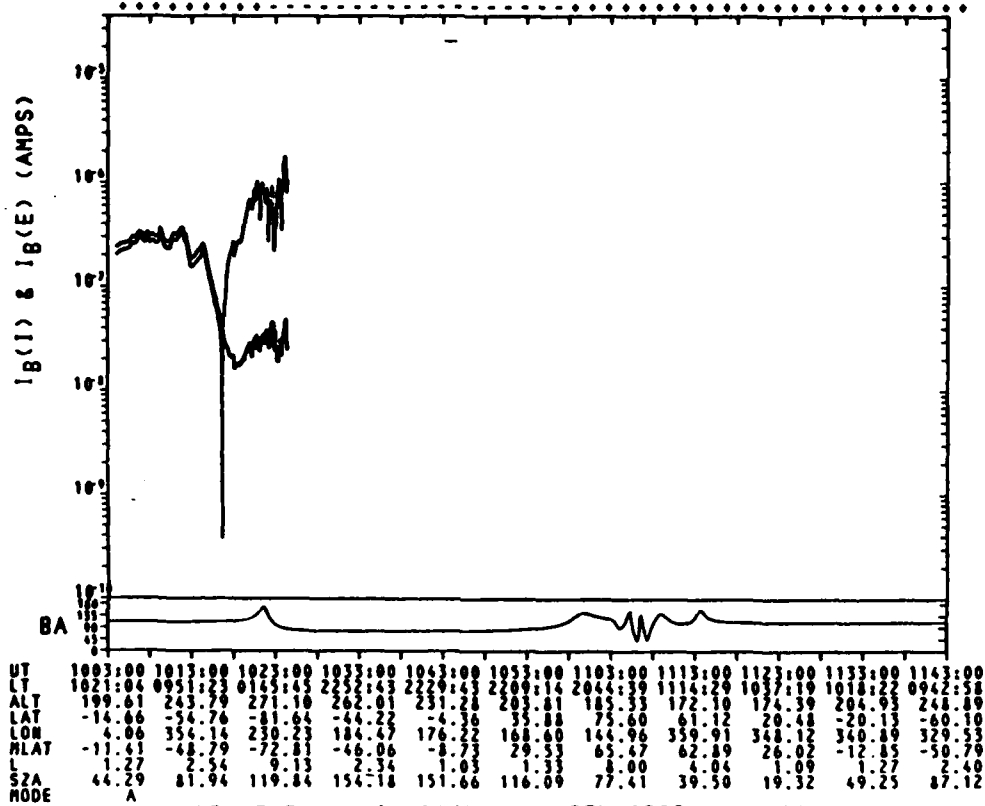
FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

UT	0537:00	0547:00	0557:00	0607:00	0617:00	0627:00	0637:00	0647:00	0657:00	0707:00	0717:00
LT	1020:01	0948:11	0106:33	2258:44	2228:41	2207:34	2023:43	1110:03	1036:06	1017:07	0938:07
ALT	198.67	242.38	267.74	257.12	226.71	200.33	182.71	169.67	172.80	204.19	245.33
LAT	-16.94	-57.02	-79.98	-61.88	-1.97	38.31	77.78	58.67	17.98	-22.84	-62.57
LOW	70.29	59.83	286.42	250.48	242.45	234.67	206.21	85.30	54.31	47.97	36.82
MLAT	-25.59	-63.13	-68.63	-32.70	5.79	44.20	74.40	49.81	11.26	-27.51	-63.42
L	1.27	4.95	3.54	1.49	1.04	1.93	17.65	2.88	1.01	1.46	6.66
SZA	46.32	84.10	121.98	155.73	149.85	113.81	75.07	37.36	20.16	51.53	89.50
MODE	A										



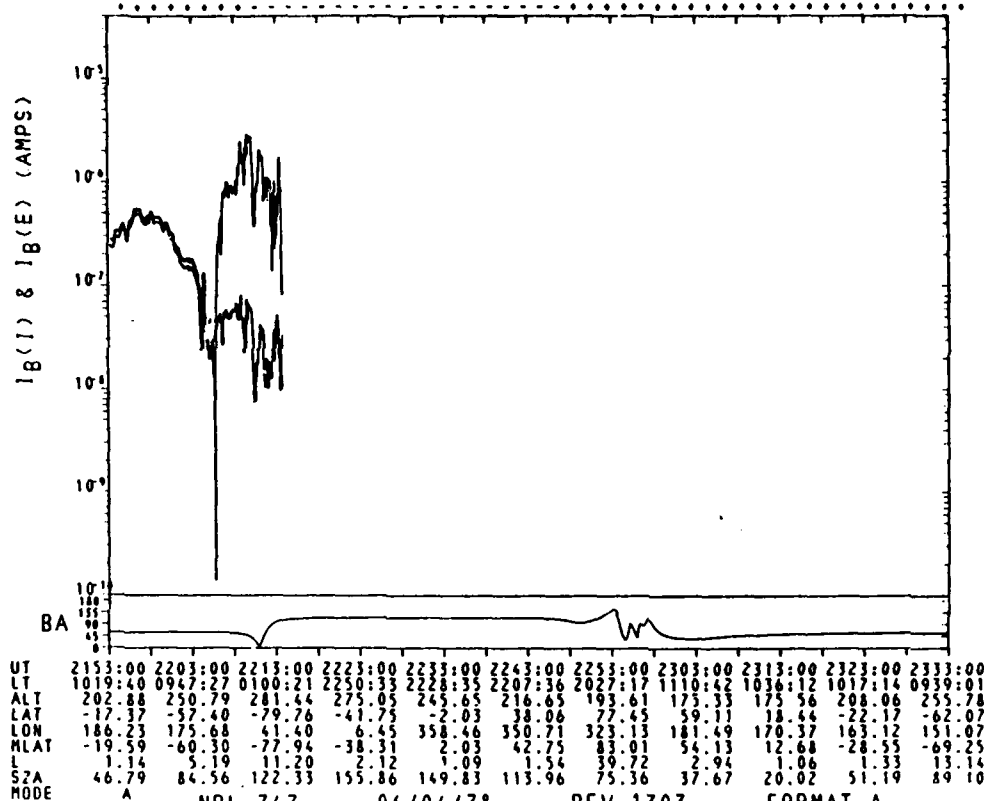


NRL 747

06/04/78

REV 1302

FORMAT A

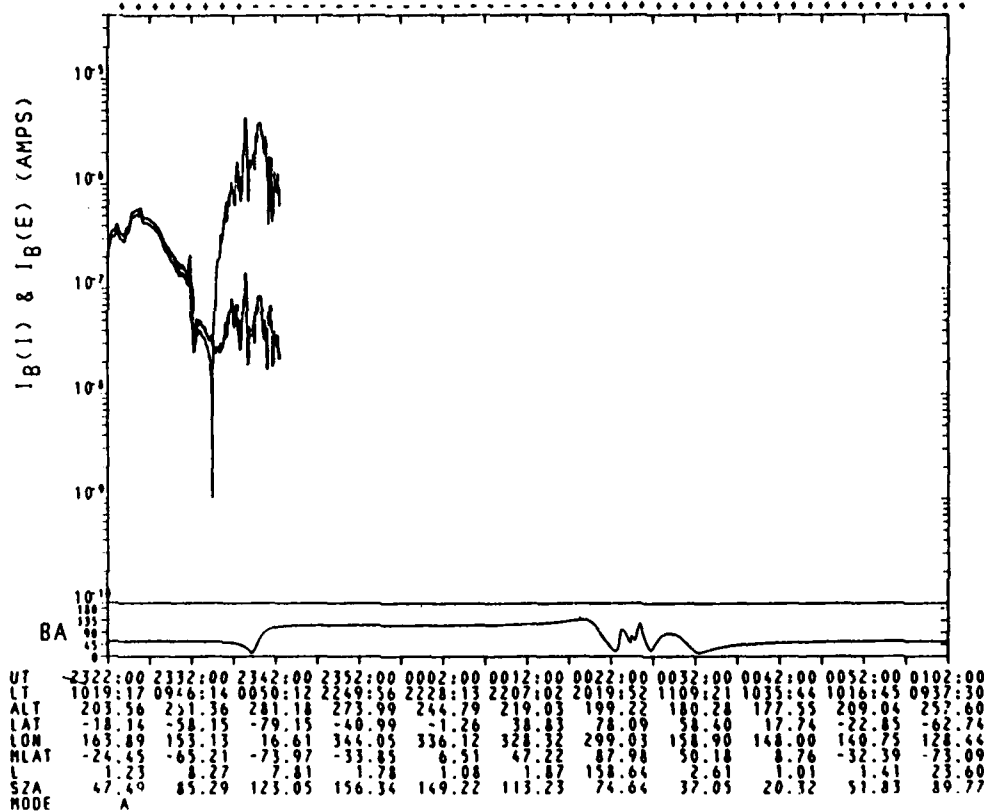


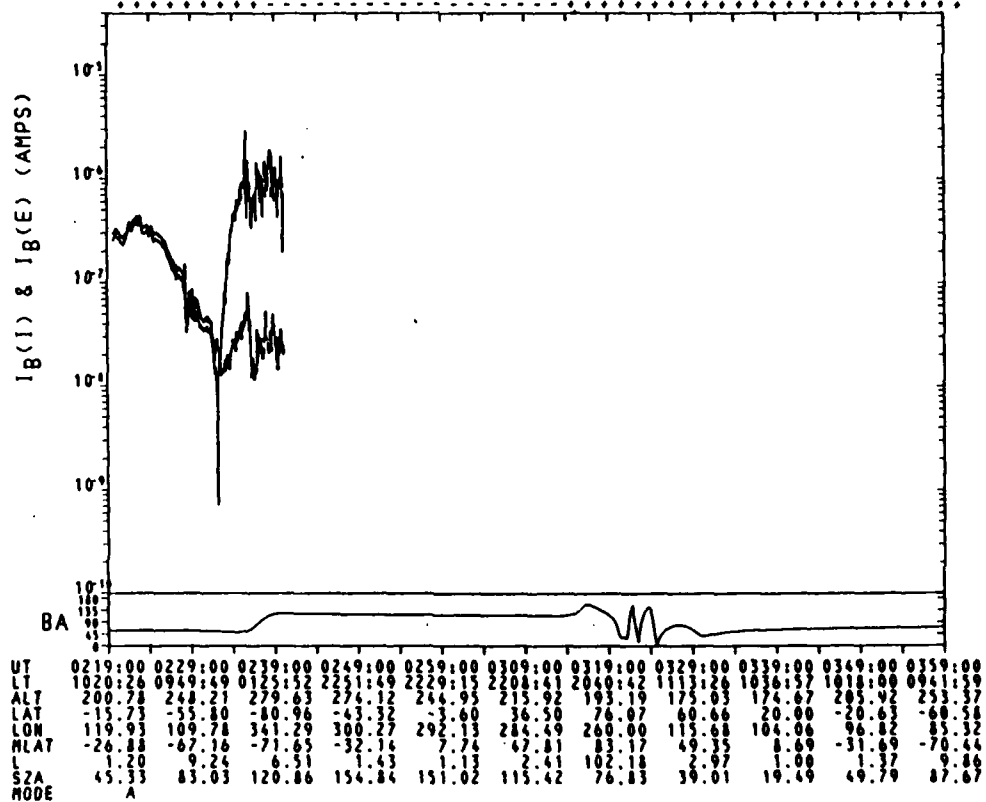
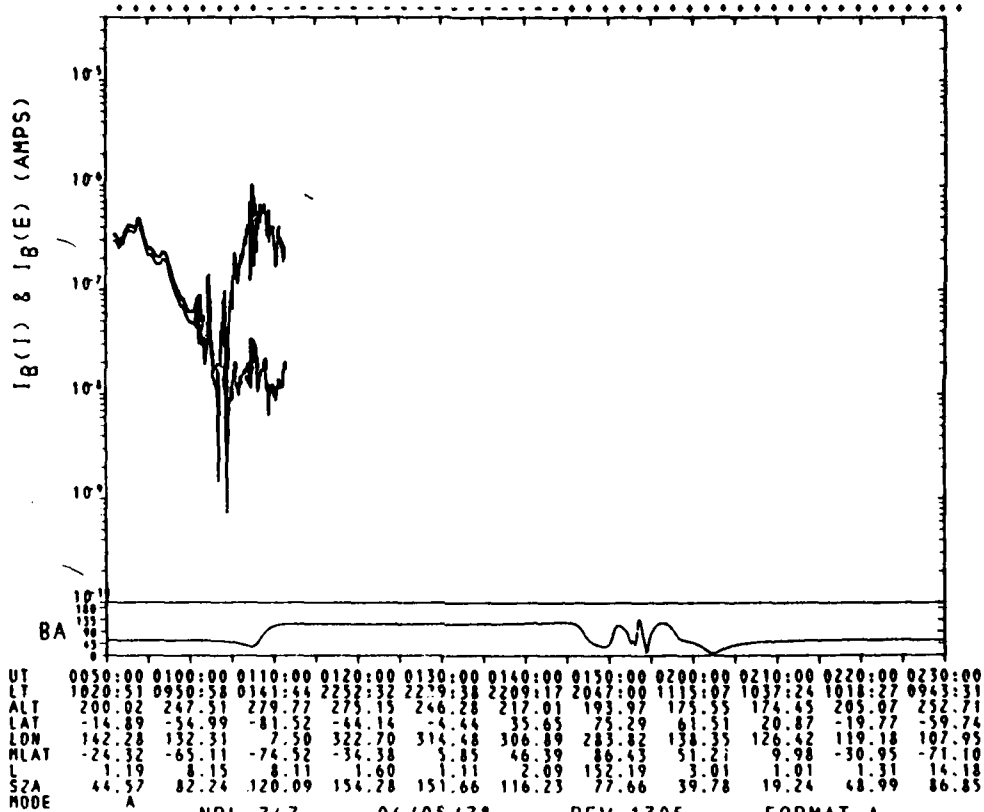
NRL 747

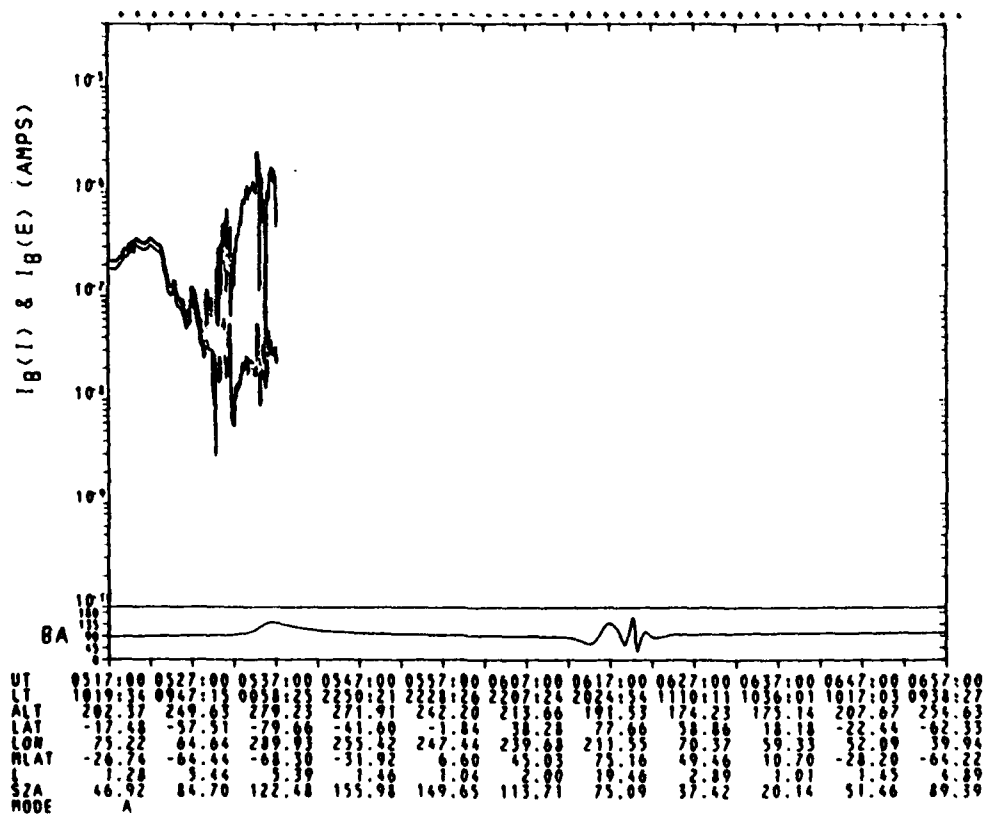
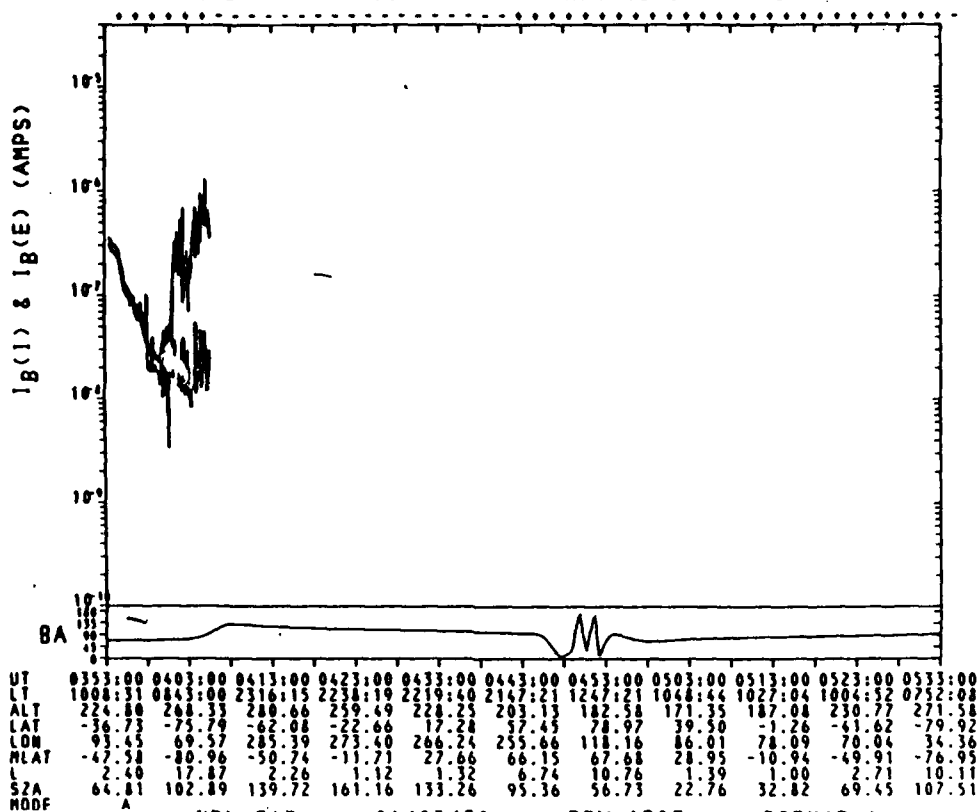
06/04/78

REV 1303

FORMAT A





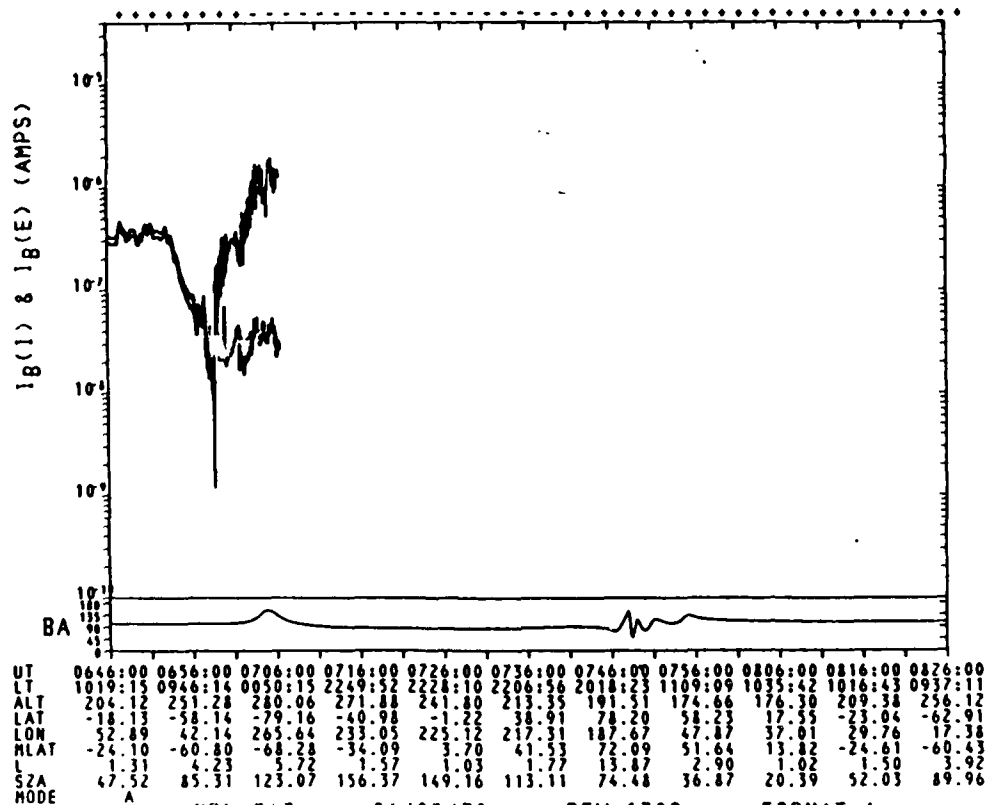


NRL 747

06/05/78

REV 1308

FORMAT A

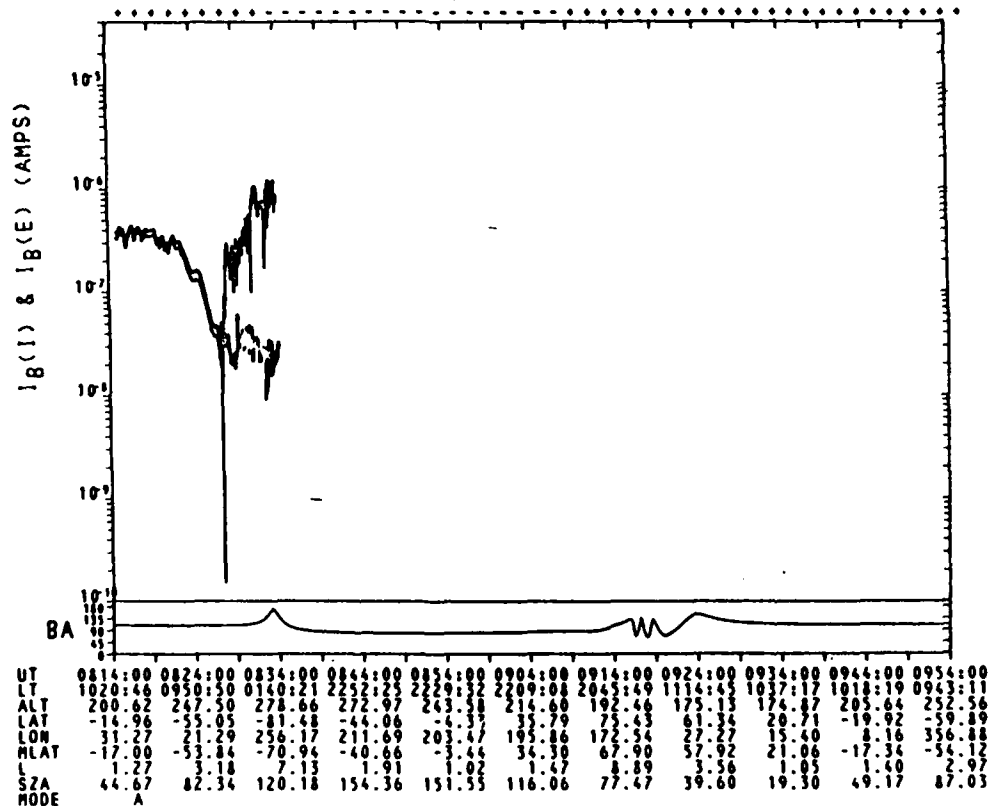


NRL 747

06/05/78

REV 1309

FORMAT A

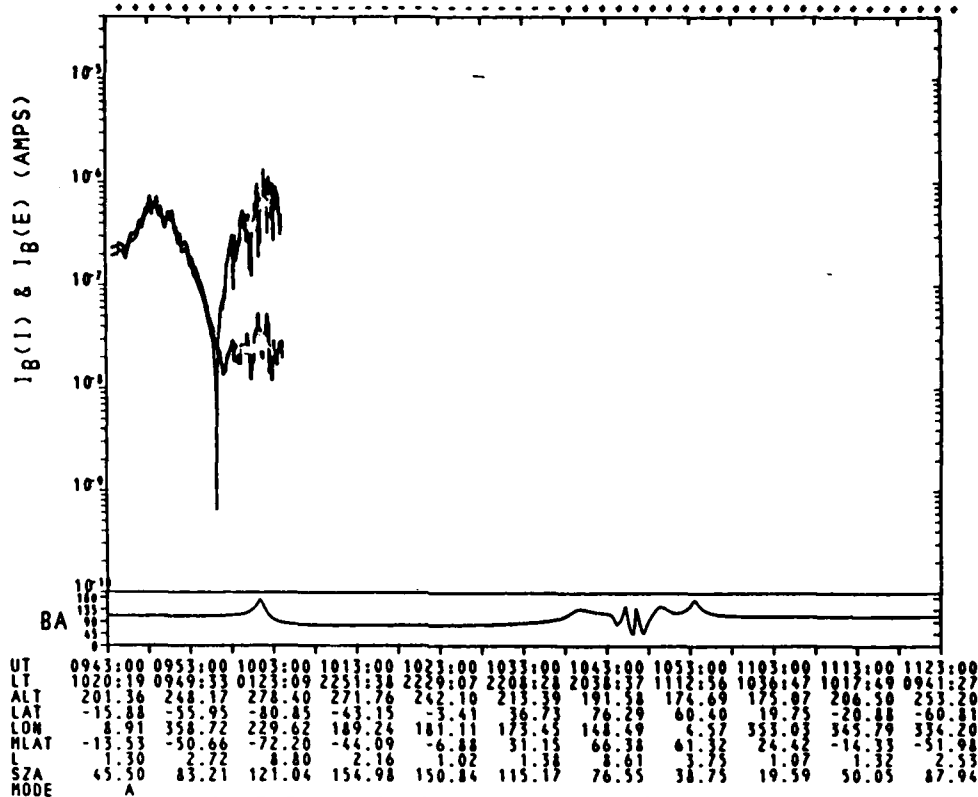


NRL 747

06/05/78

REV 1310

FORMAT A

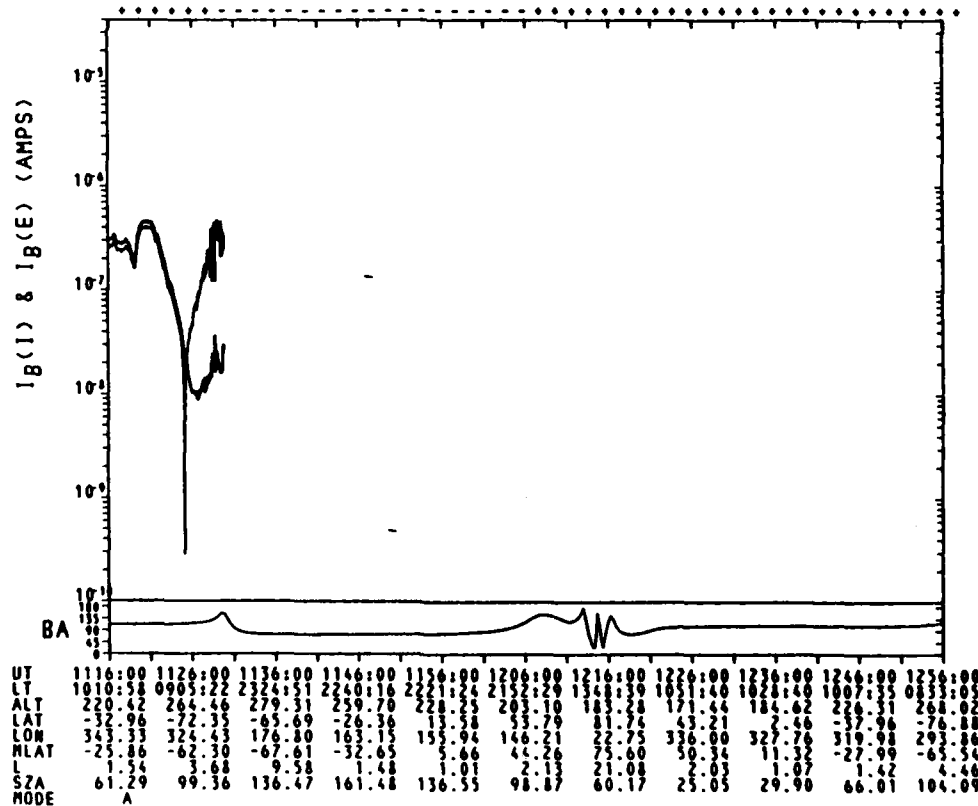


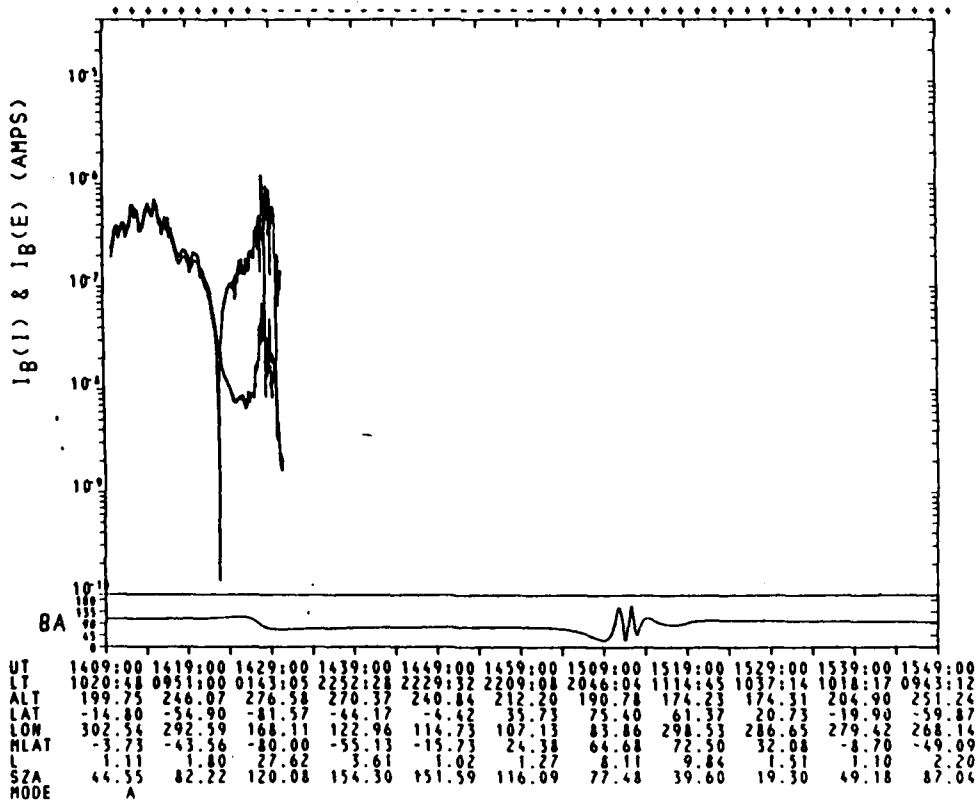
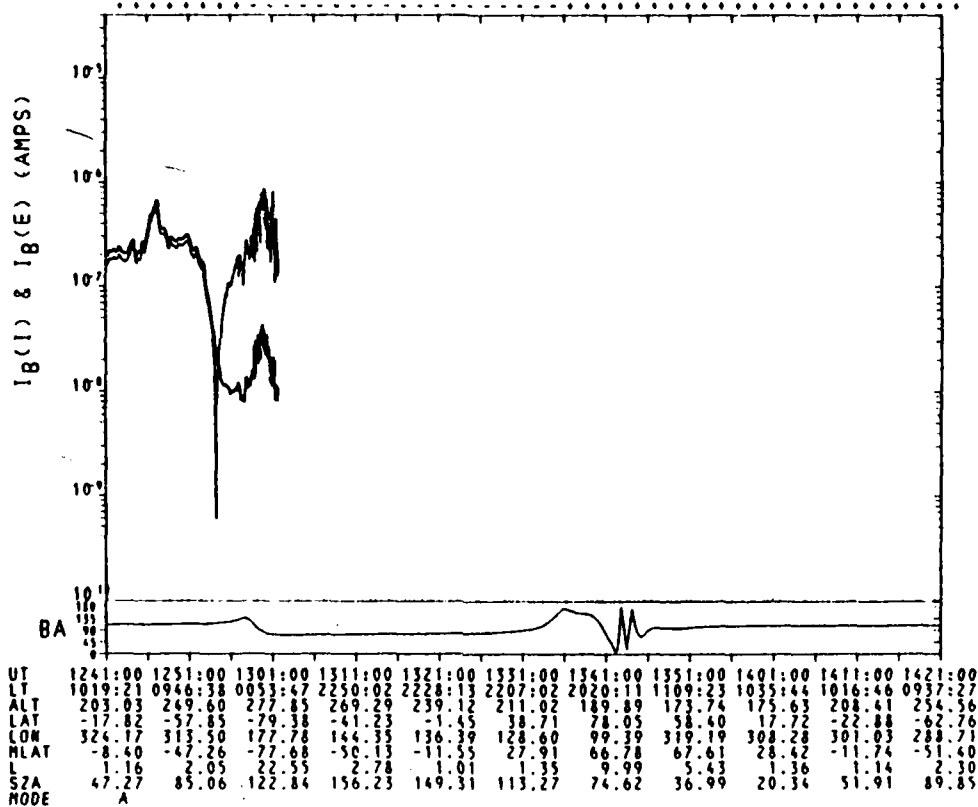
NRL 747

06/05/78

REV 1311

FORMAT A



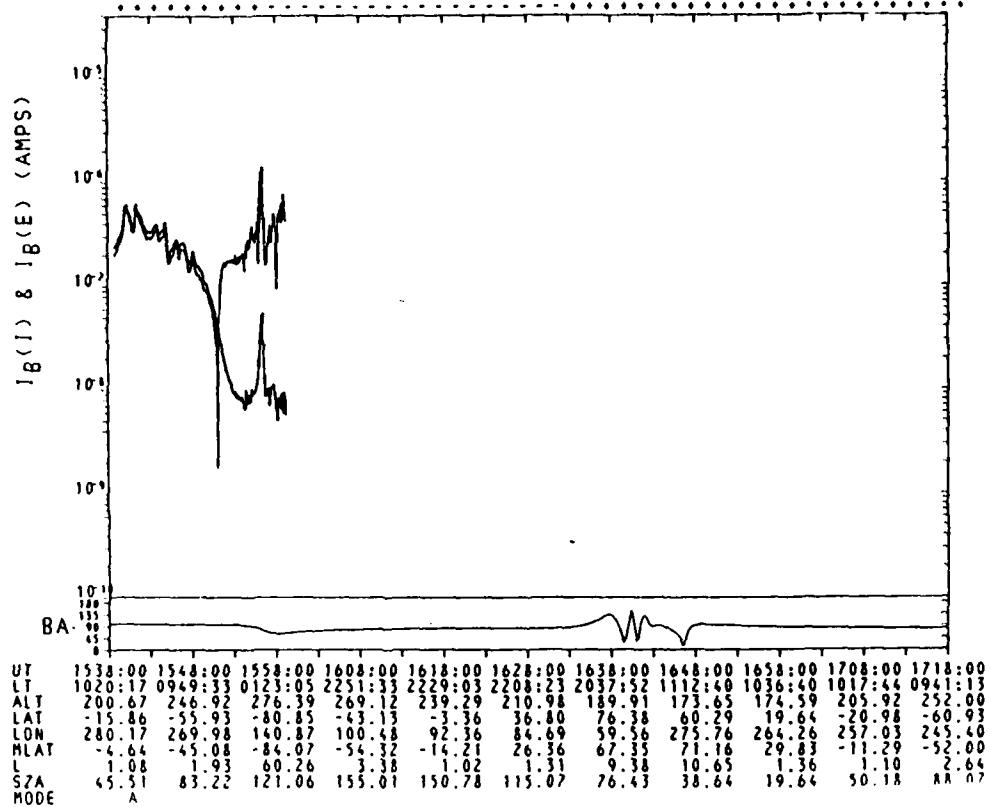


NRL 747

06/05/78

REV 1314

FORMAT A

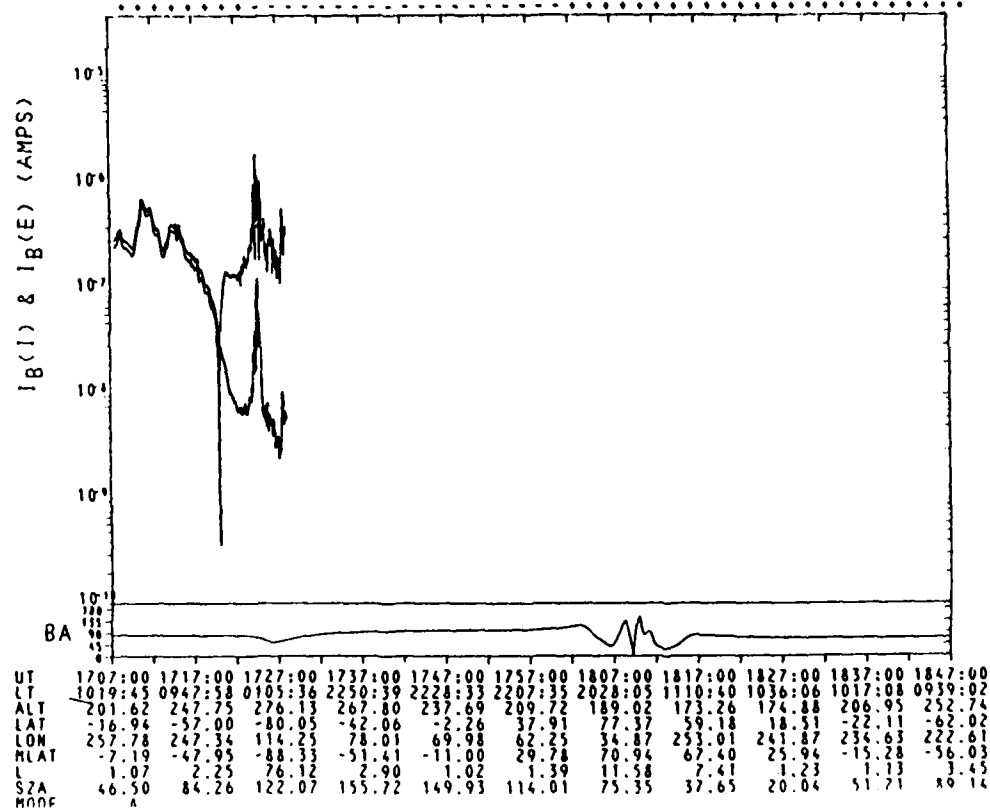


NRL 747

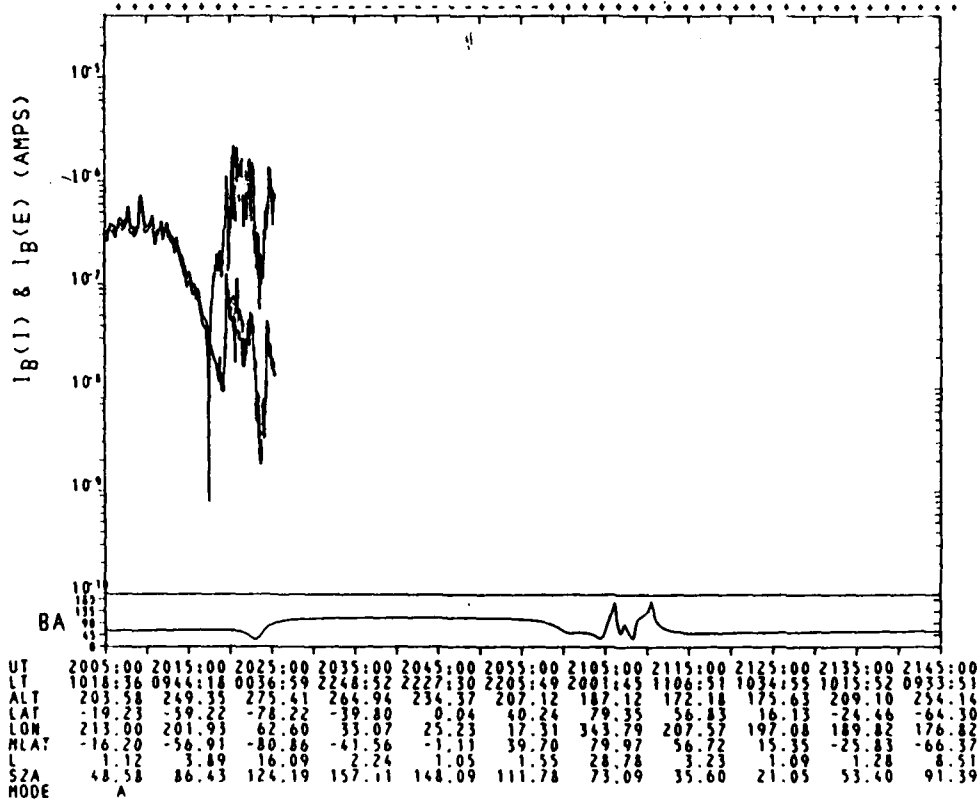
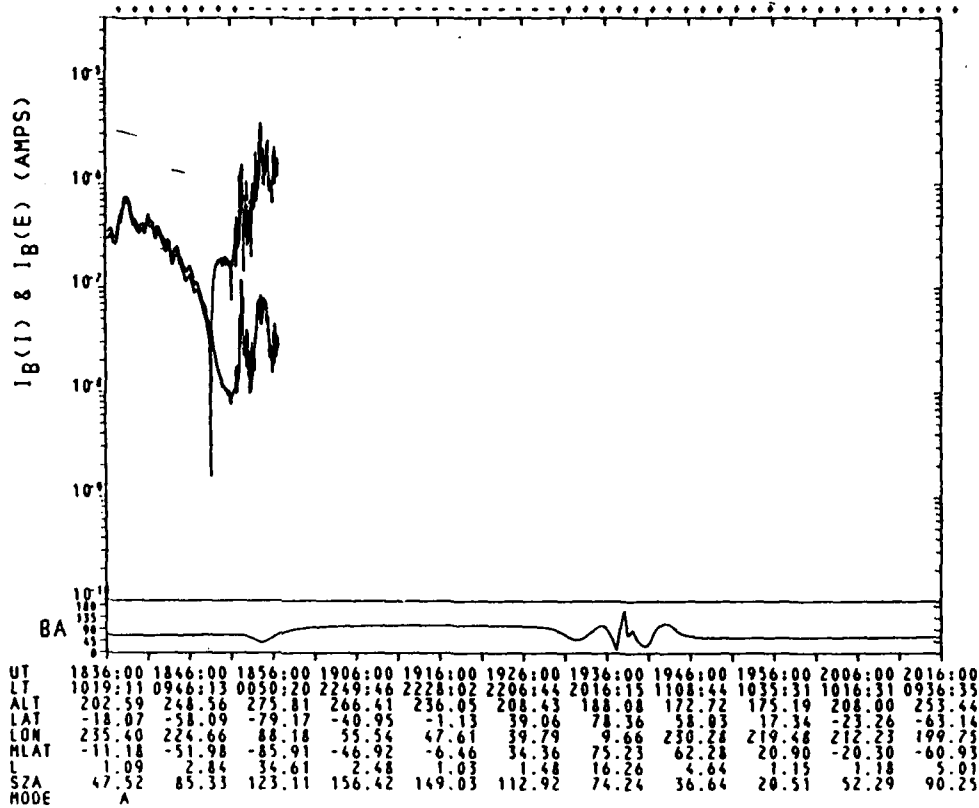
06/05/78

REV 1315

FORMAT A





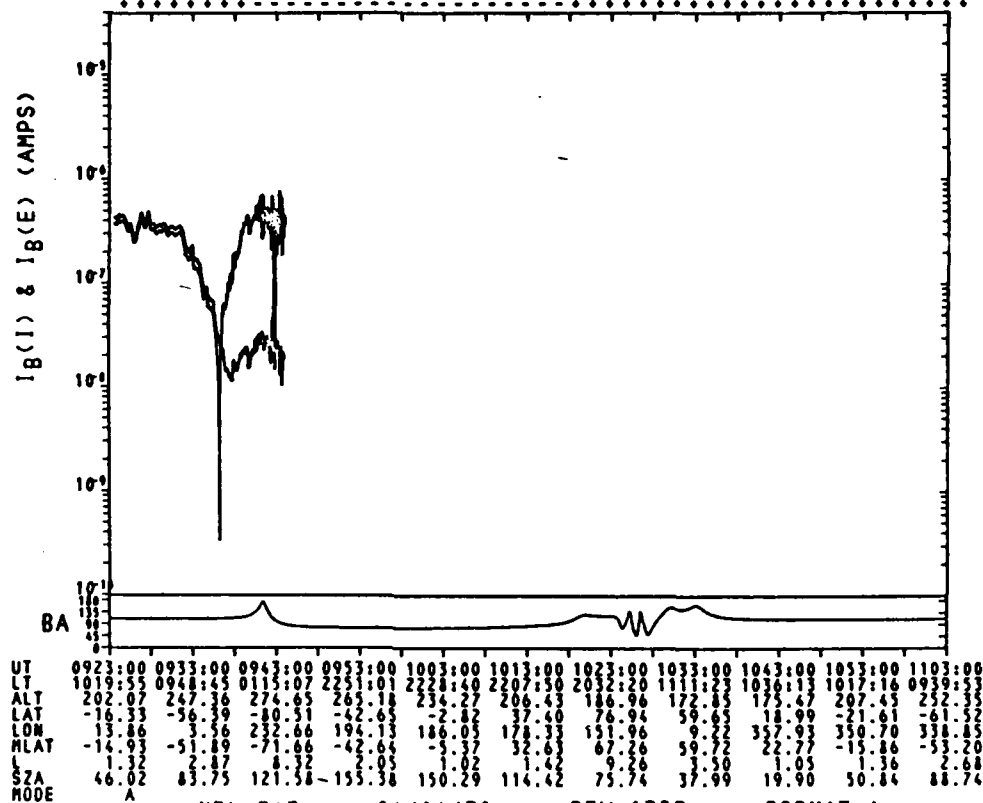


NRL 747

06/06/78

REV 1326

FORMAT A

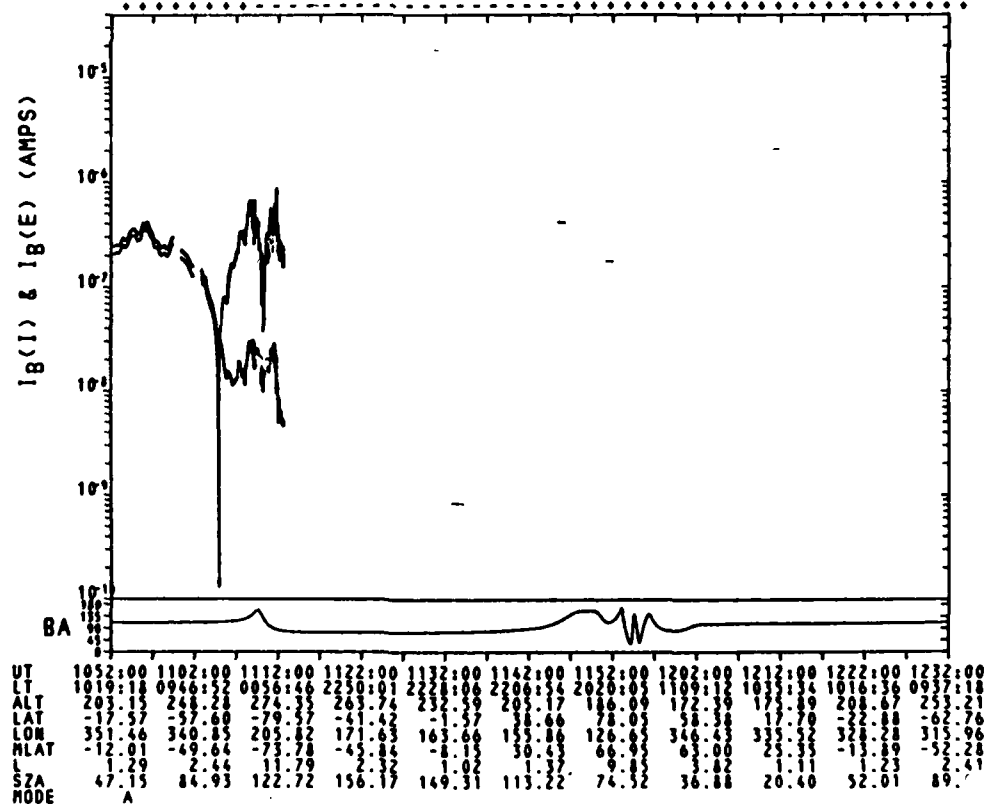


NRL 747

06/06/78

REV 1327

FORMAT A

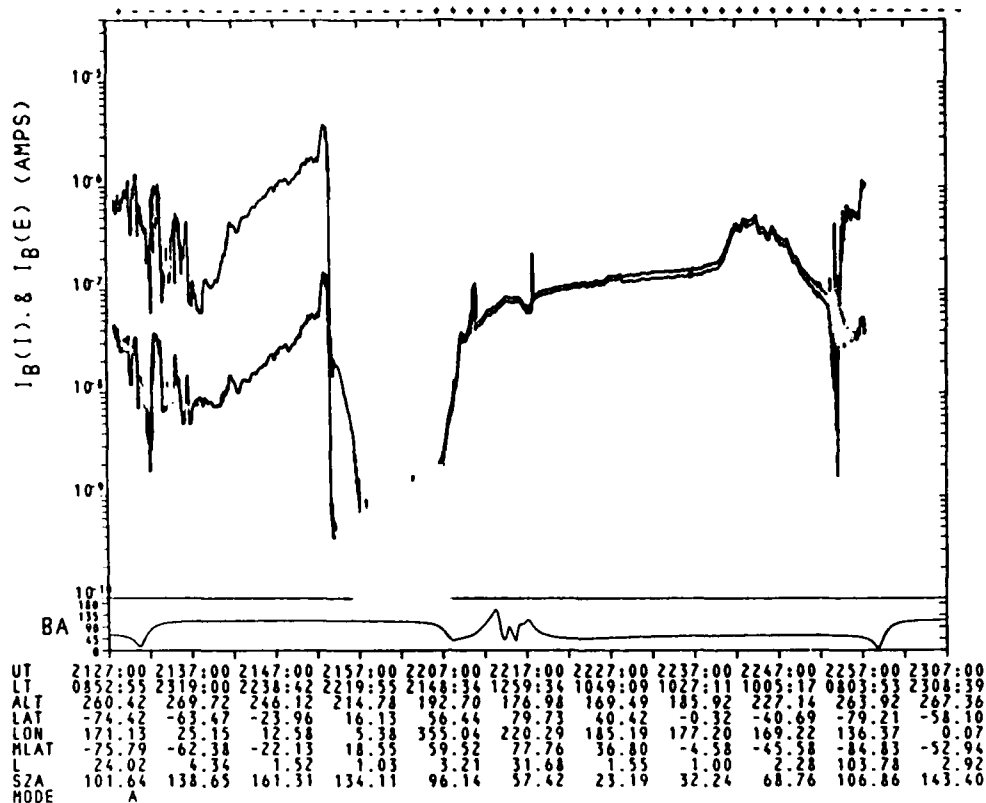


NRL 747

06/06/78

REV 1334

FORMAT A

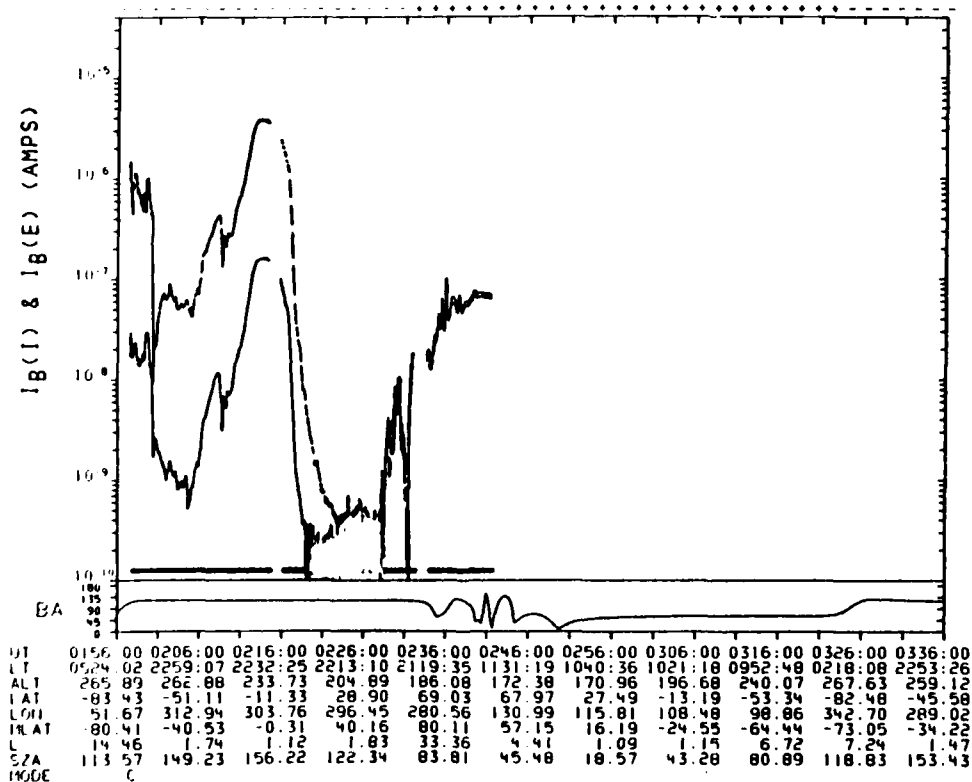


NRL 747

06/07/78

REV 1337

FORMAT C

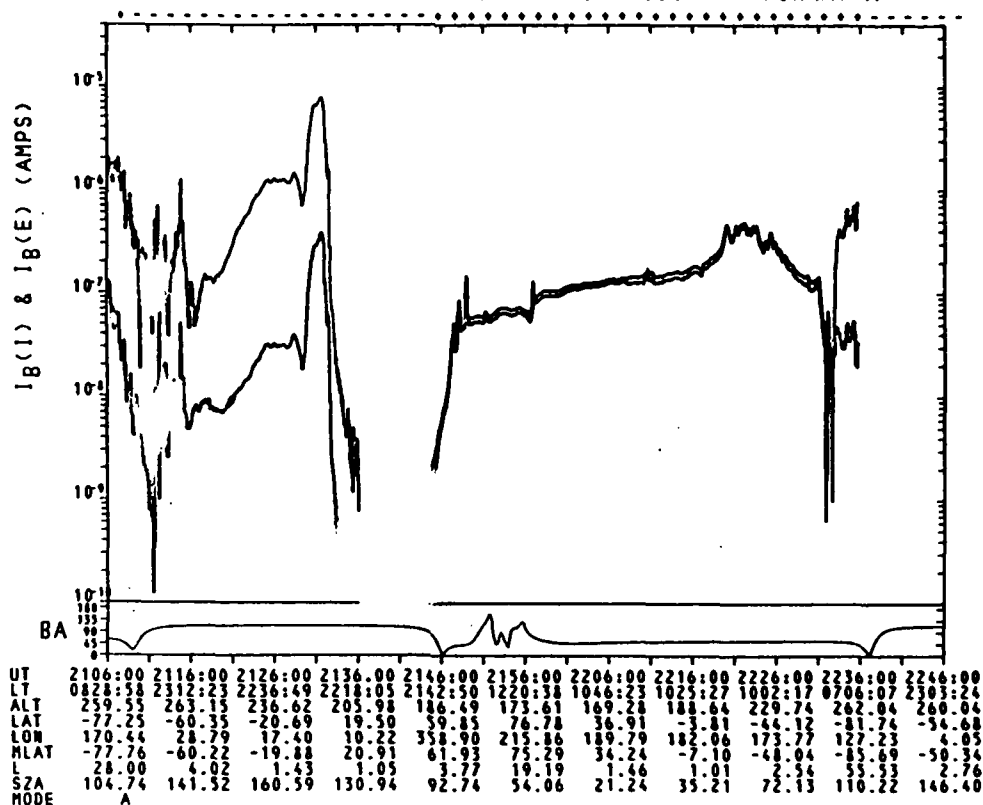


NRL 747

06/07/78

REV 1350

FORMAT A

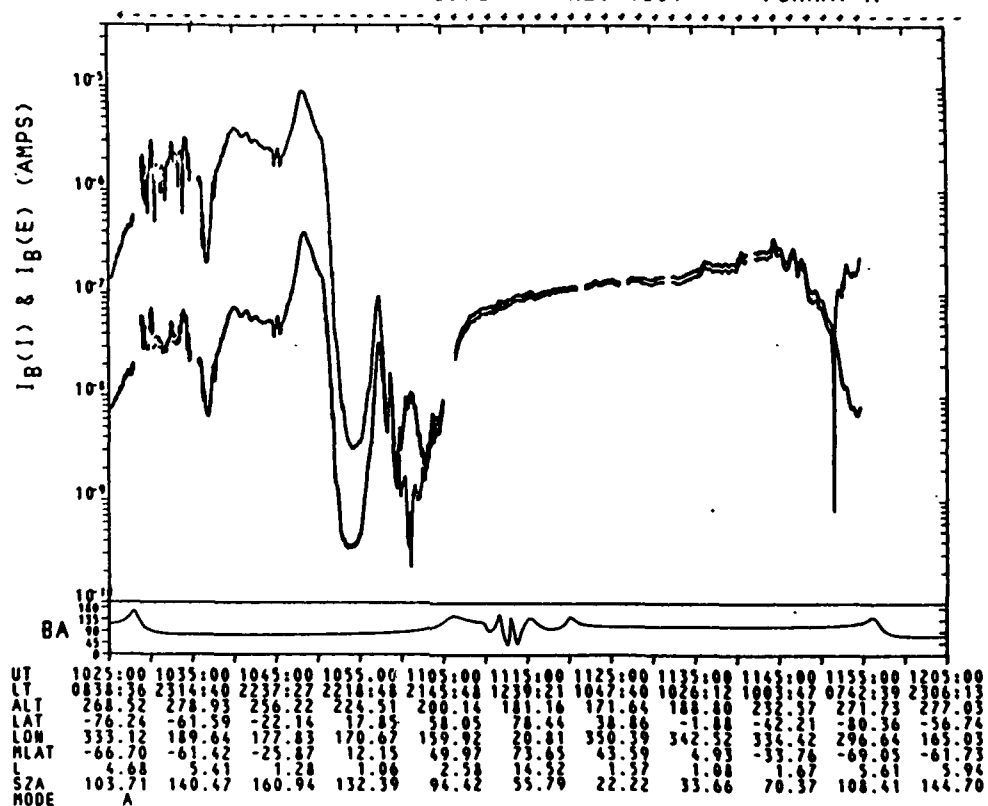


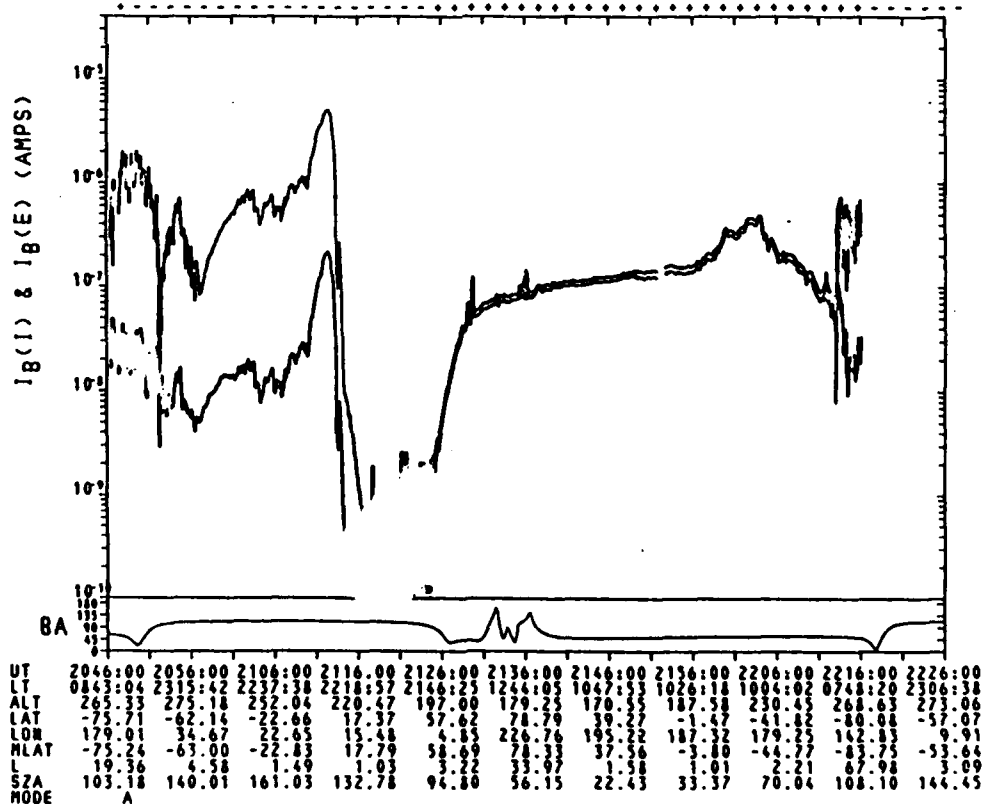
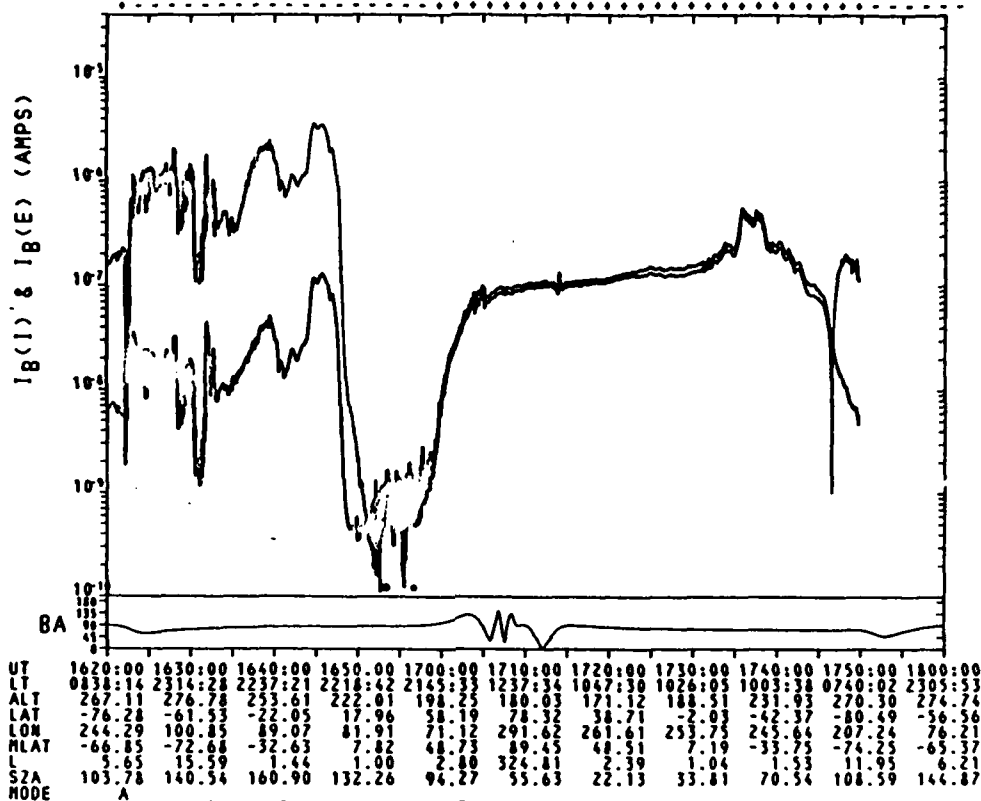
NRL 747

06/08/78

REV 1359

FORMAT A



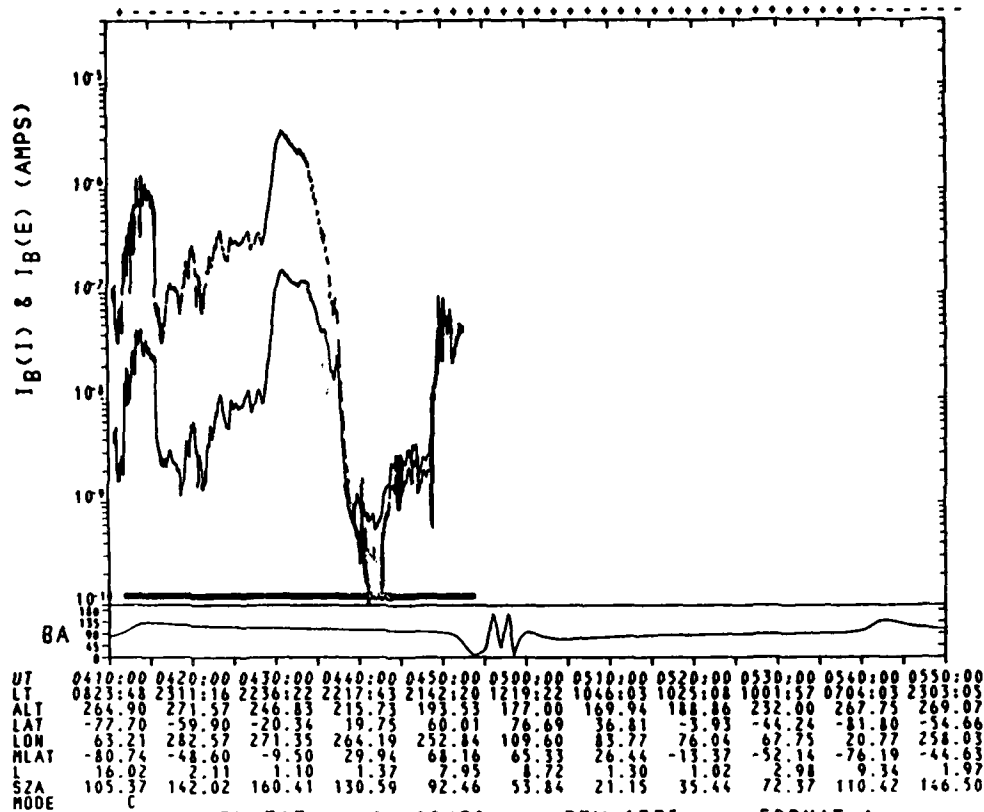


NRL 747

06/09/78

REV 1371

FORMAT C

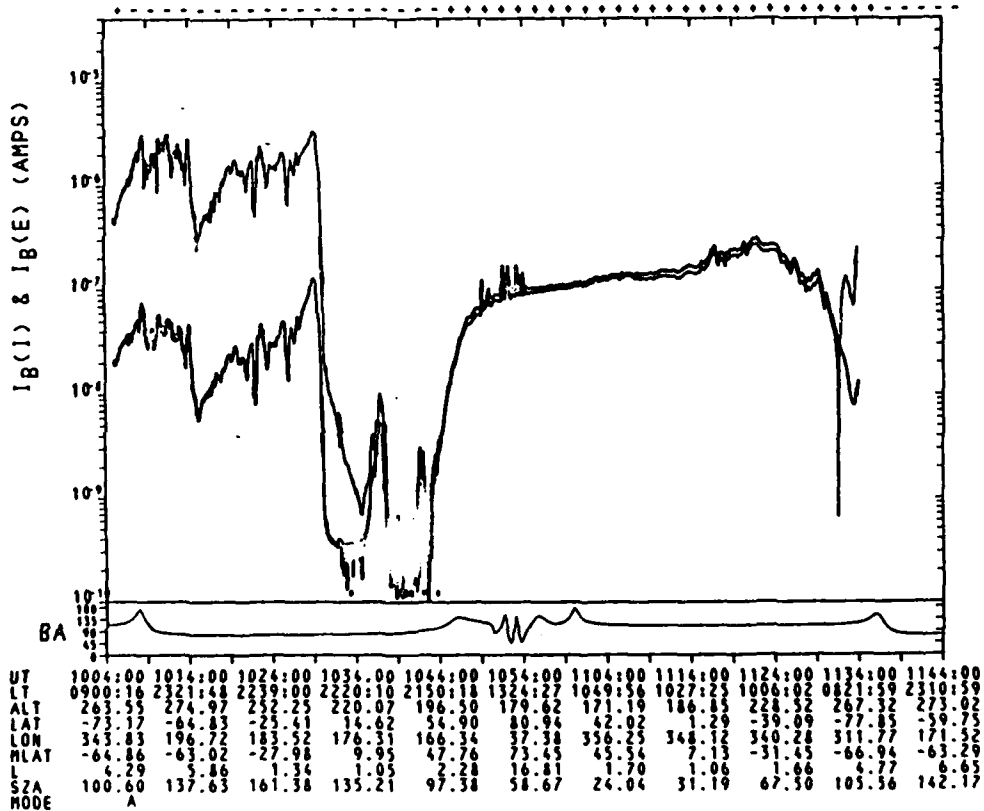


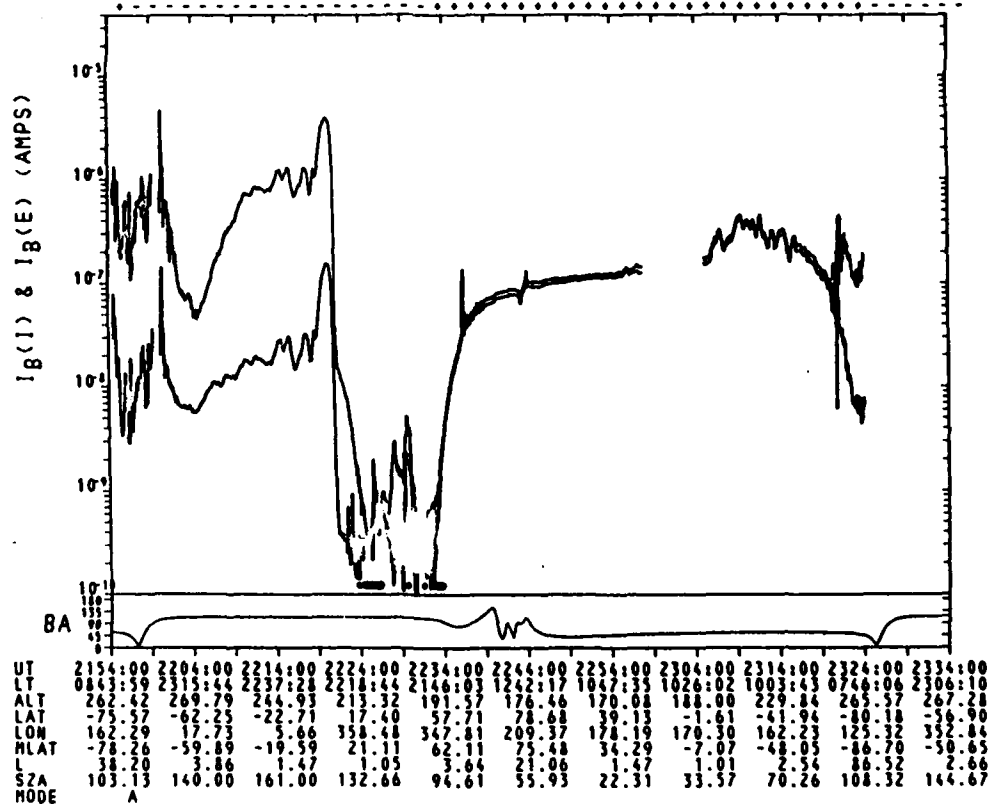
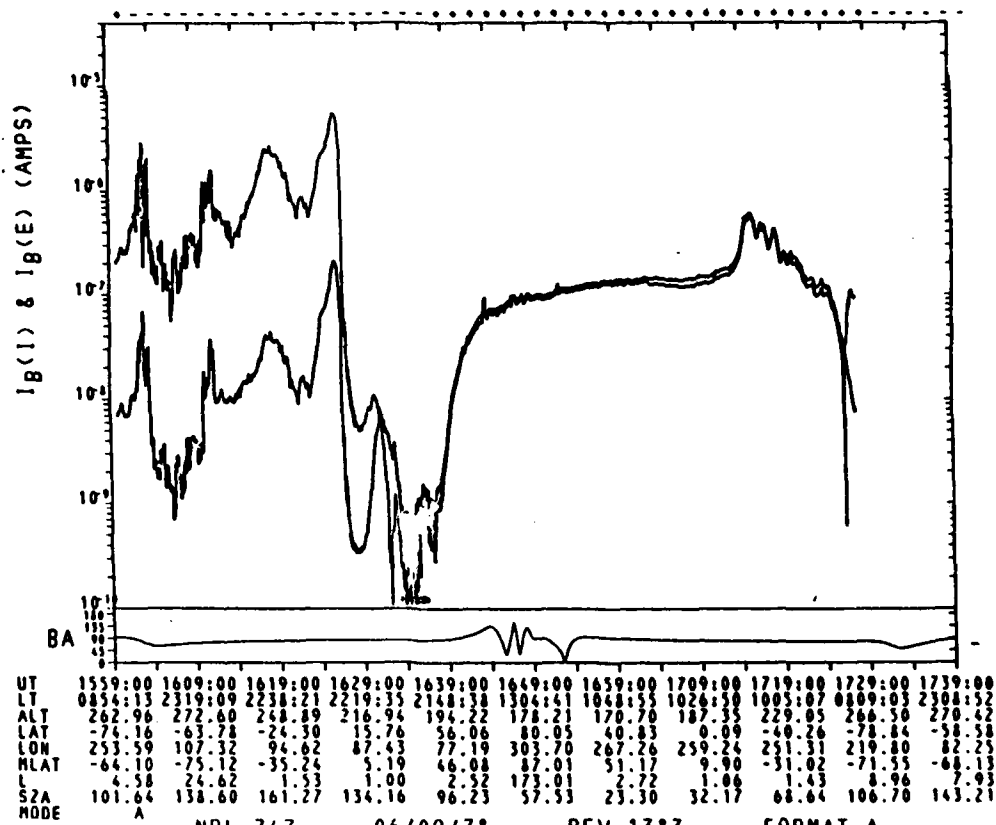
NRL 747

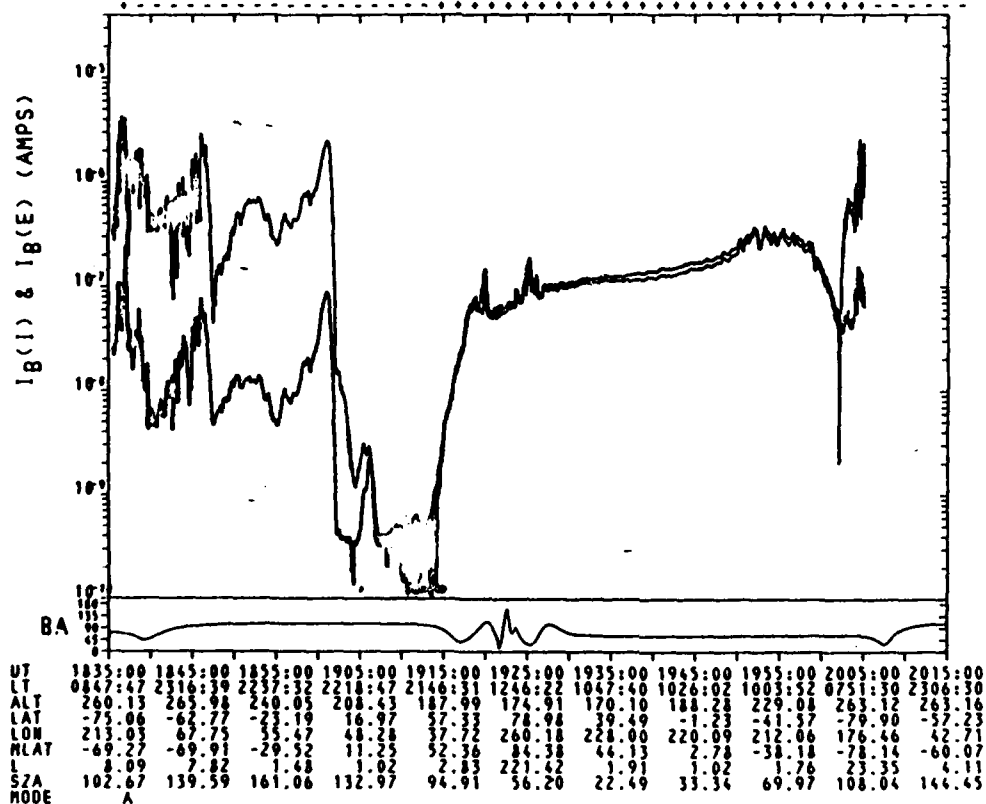
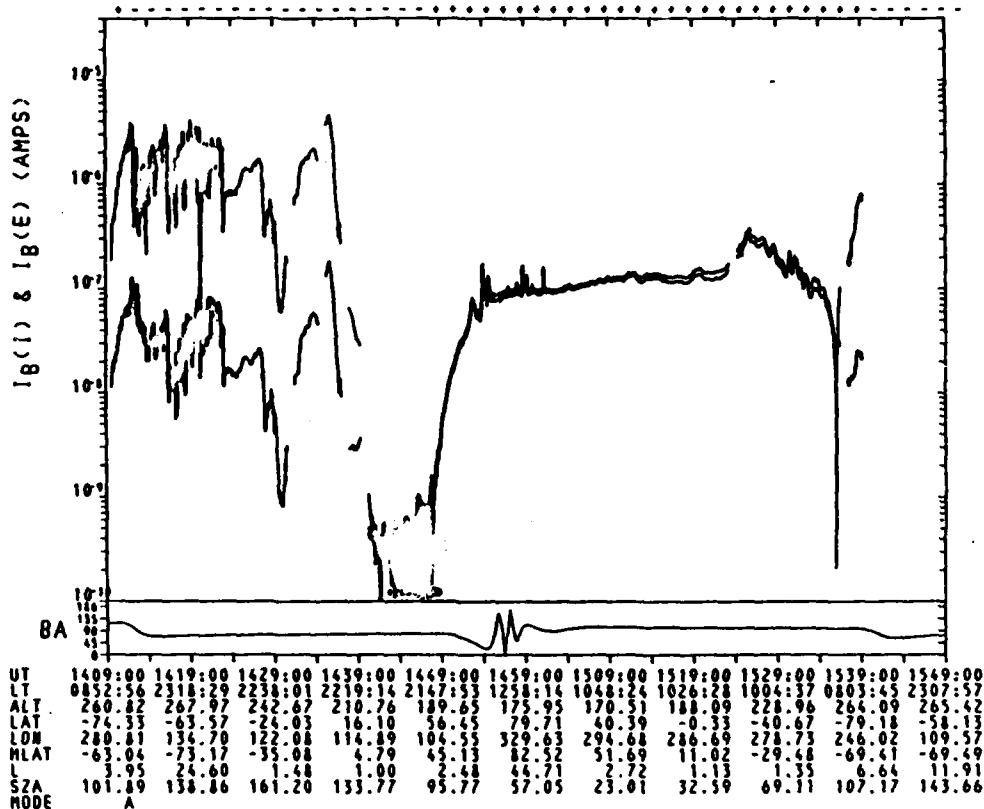
06/09/78

REV 1375

FORMAT A







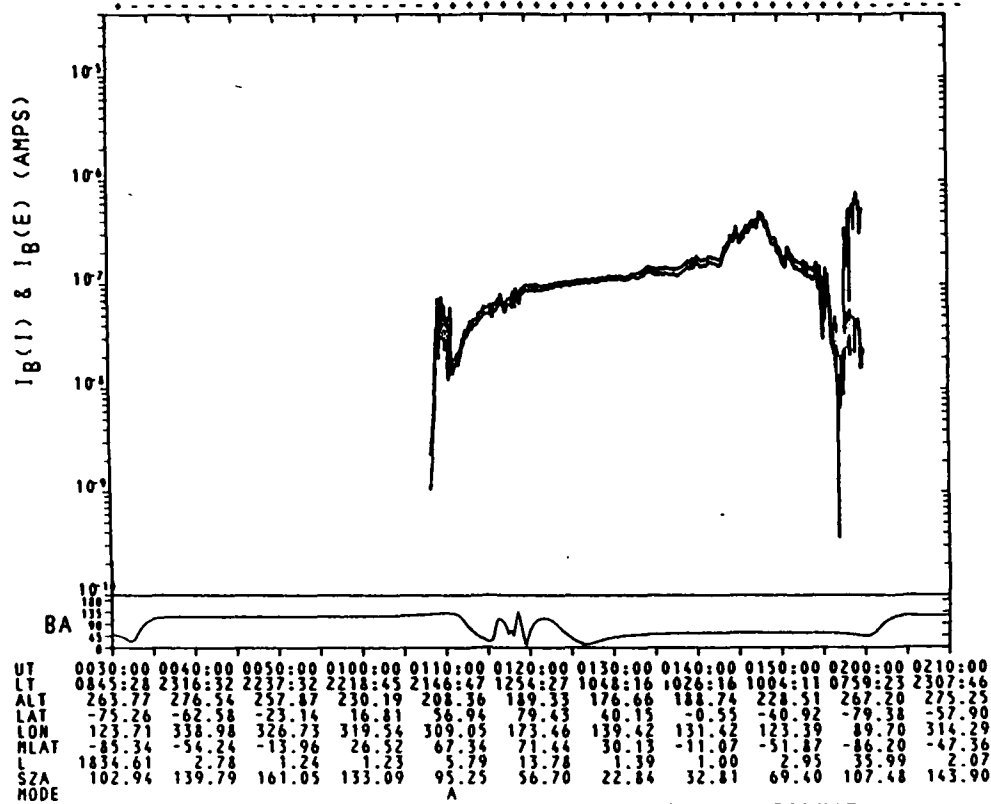


NRL 747

06/11/78

REV 1401

FORMAT A

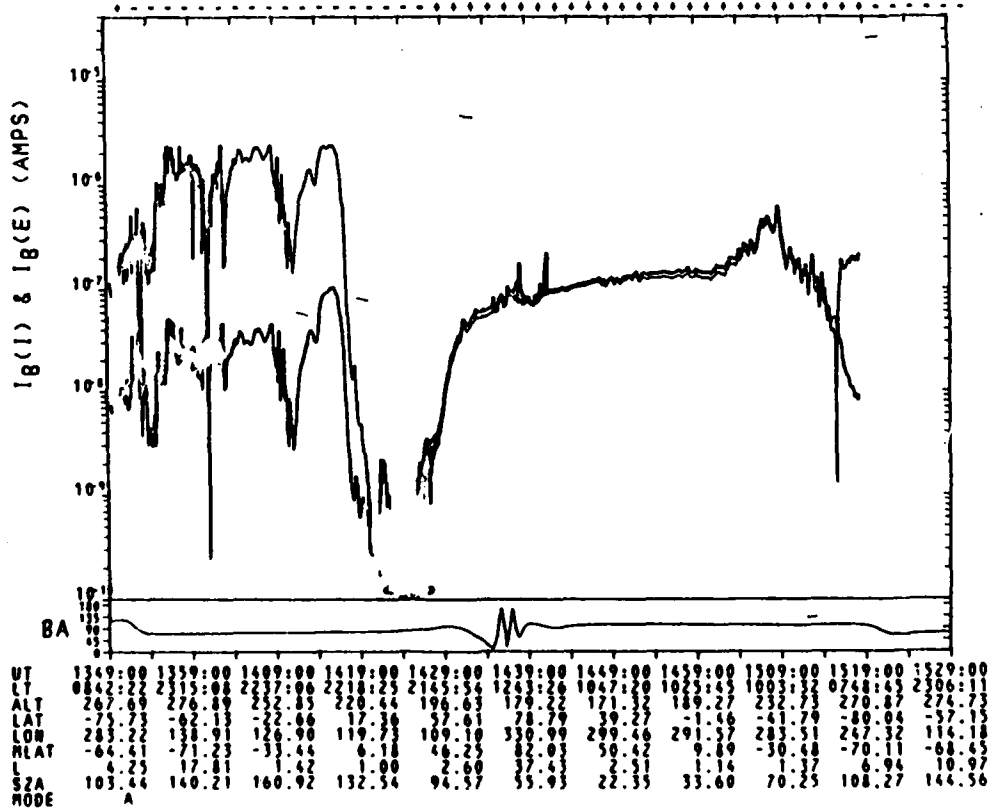


NRL 747

06/11/78

REV 1410

FORMAT A

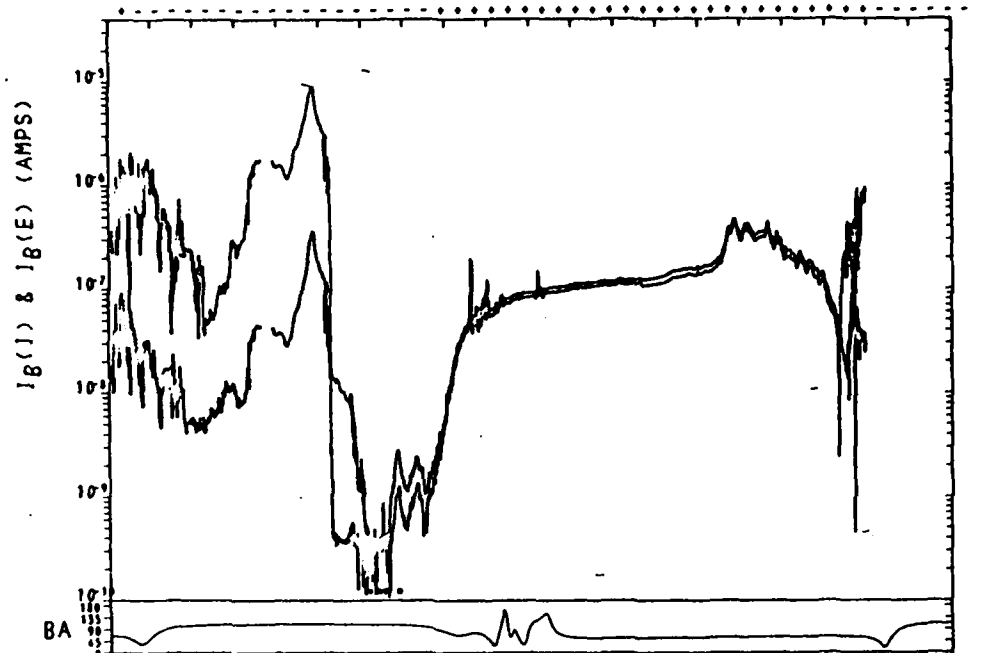


NRL 747

06/11/78

REV 1414

FORMAT A



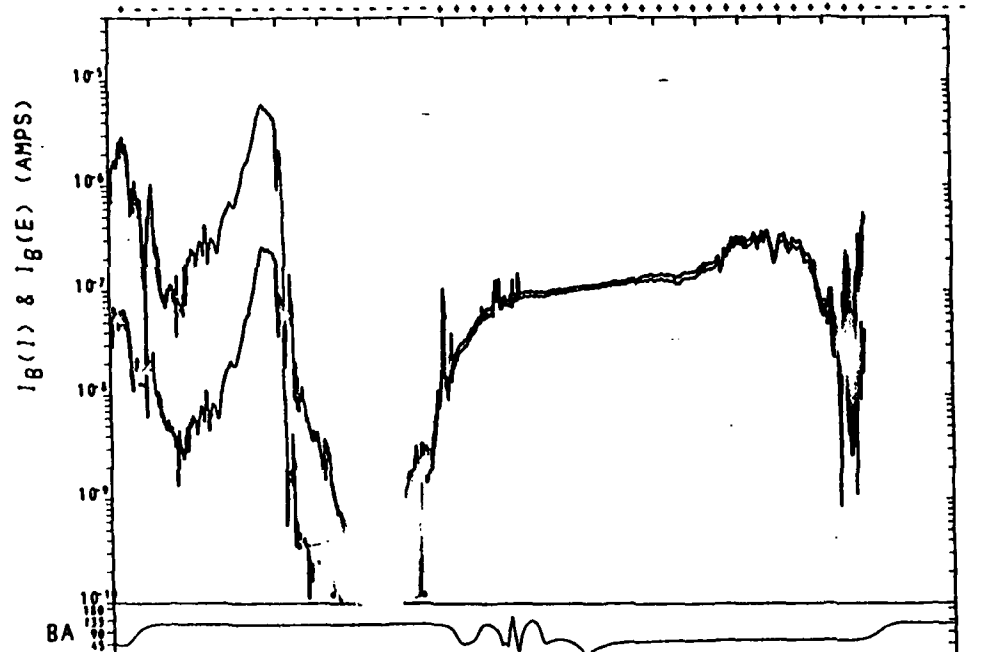
UT	1944:00	1954:00	2004:00	2014:00	2024:00	2034:00	2044:00	2054:00	2104:00	2114:00	2124:00
LT	0837:33	2313:47	2236:42	2218:01	2144:41	1234:54	1046:44	1025:22	1002:51	0736:31	2304:59
ALT	266.35	274.20	249.45	217.31	194.29	177.72	170.66	149.20	232.41	269.31	271.74
LAT	-75.29	-61.50	-21.99	-07.31	53.34	78.16	38.51	-2.23	-42.55	-80.62	-56.37
LOH	193.28	49.83	38.06	30.89	20.06	240.11	210.57	202.73	194.60	155.52	25.14
RLAT	-73.22	-65.40	-25.19	15.47	59.44	80.38	39.42	-1.52	-42.45	-81.71	-55.82
L	13.21	5.38	1.46	1.03	51.12	51.79	1.67	1.01	2.02	42.13	3.42
SZA	104.06	140.79	160.75	131.88	93.84	55.20	21.93	34.25	70.99	109.02	145.24
MODE	A										

NRL 747

06/12/78

REV 1418

FORMAT A



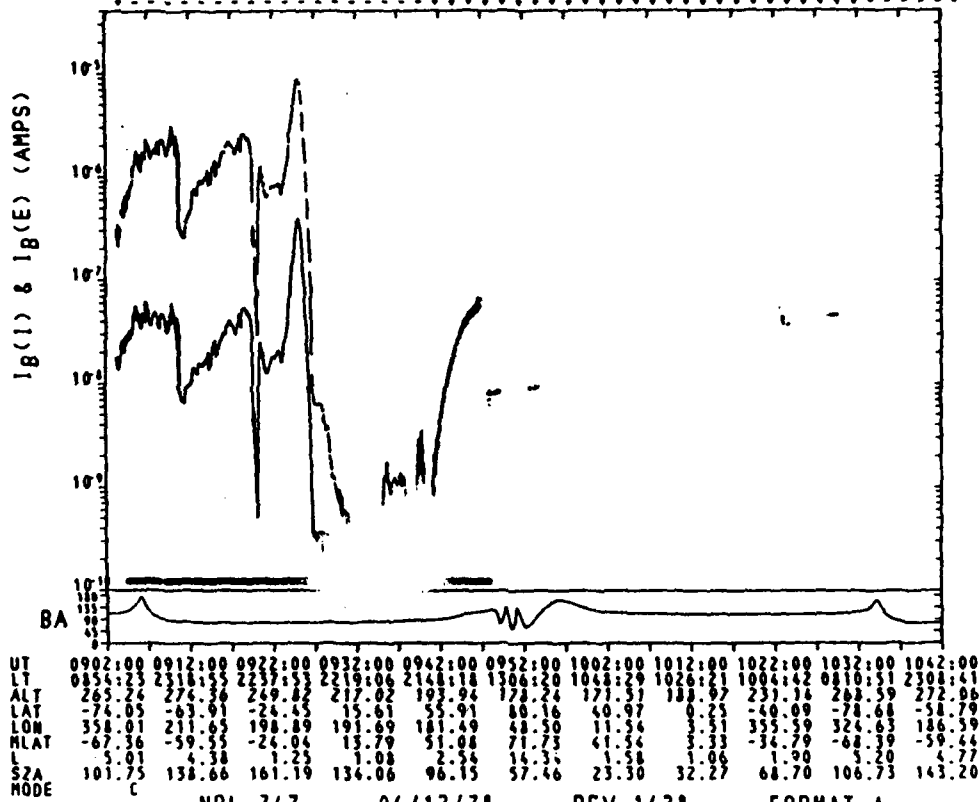
UT	0139:00	0149:00	0159:00	0209:00	0219:00	0229:00	0239:00	0249:00	0259:00	0309:00	0319:00
LT	0827:00	2311:24	2235:59	2217:19	2142:22	1221:36	1045:41	1024:42	1001:50	0711:00	2302:58
ALT	265.21	271.14	245.67	213.74	191.70	176.08	170.07	189.59	232.71	267.98	268.47
LAT	-73.36	-60.29	-20.72	19.38	59.67	76.98	37.13	-3.59	-43.90	-81.57	-55.01
LOH	101.90	320.50	309.15	301.98	290.74	148.05	121.57	113.83	105.57	60.40	295.90
RLAT	-87.99	-50.17	-9.99	30.45	71.02	67.00	26.00	-14.92	-55.23	-81.41	-43.71
L	73.52	2.29	1.15	1.46	9.37	9.17	1.30	1.00	3.56	16.33	1.82
SZA	105.23	141.87	160.39	130.66	92.54	53.92	21.24	35.41	72.50	110.53	146.39
MODE	A										

NRL 747

06/12/78

REV 1423

FORMAT C

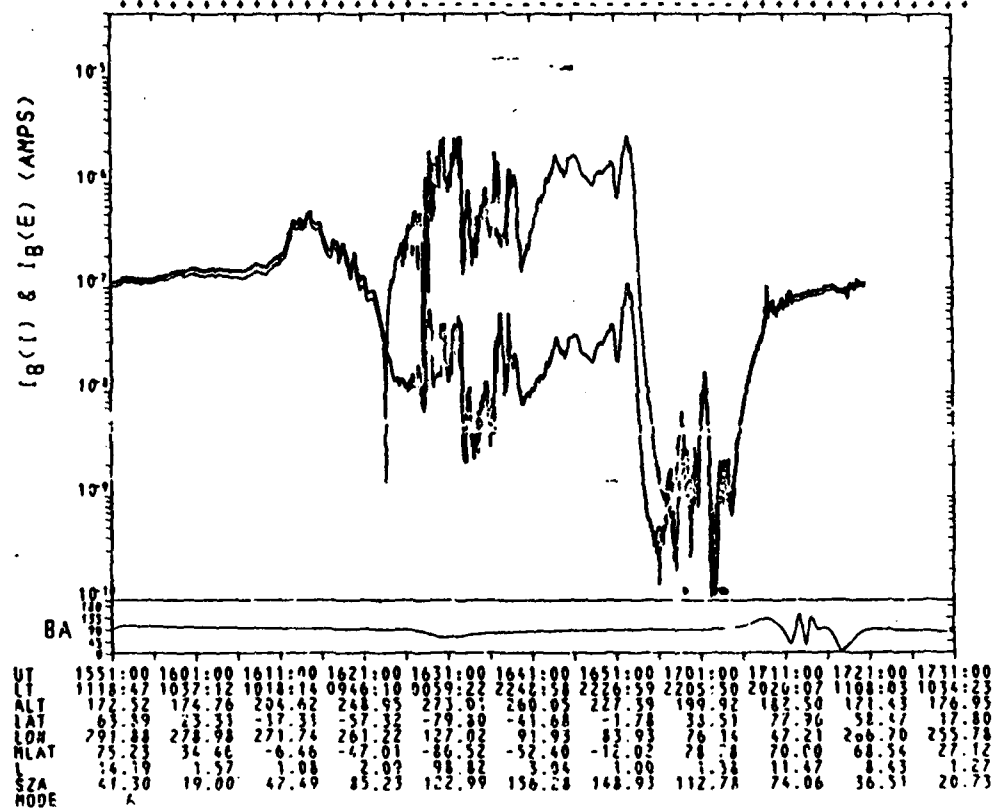


NRL 747

06/12/78

REV 1428

FORMAT A

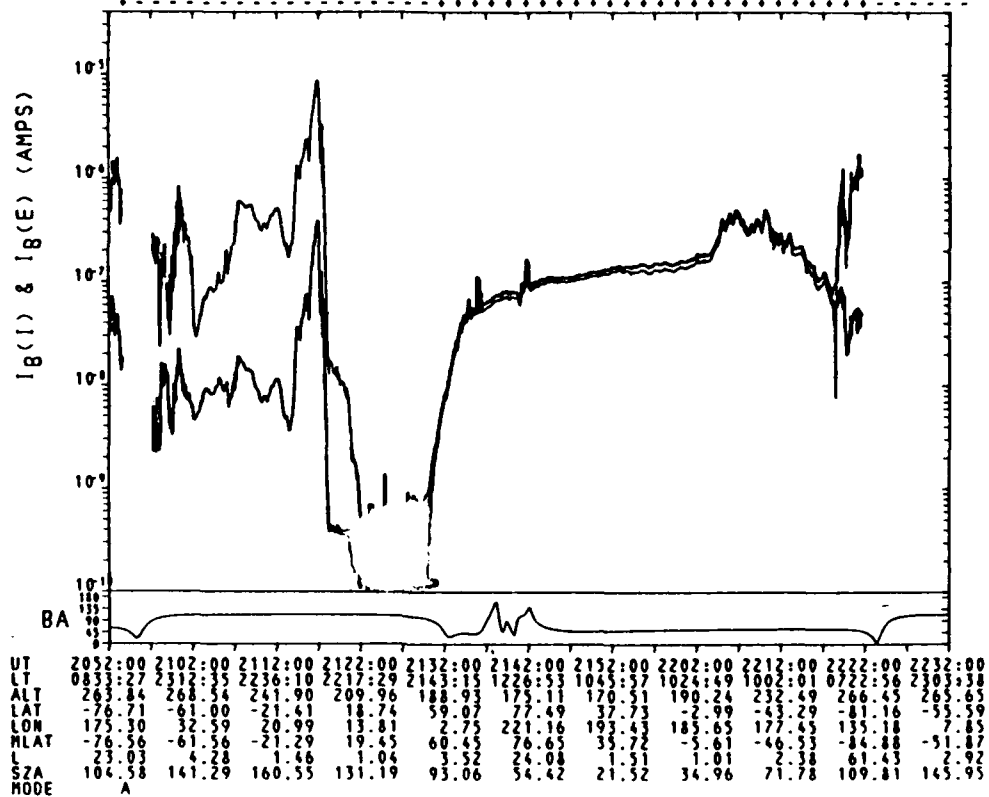


NRL 747

06/12/78

REV 1431

FORMAT A

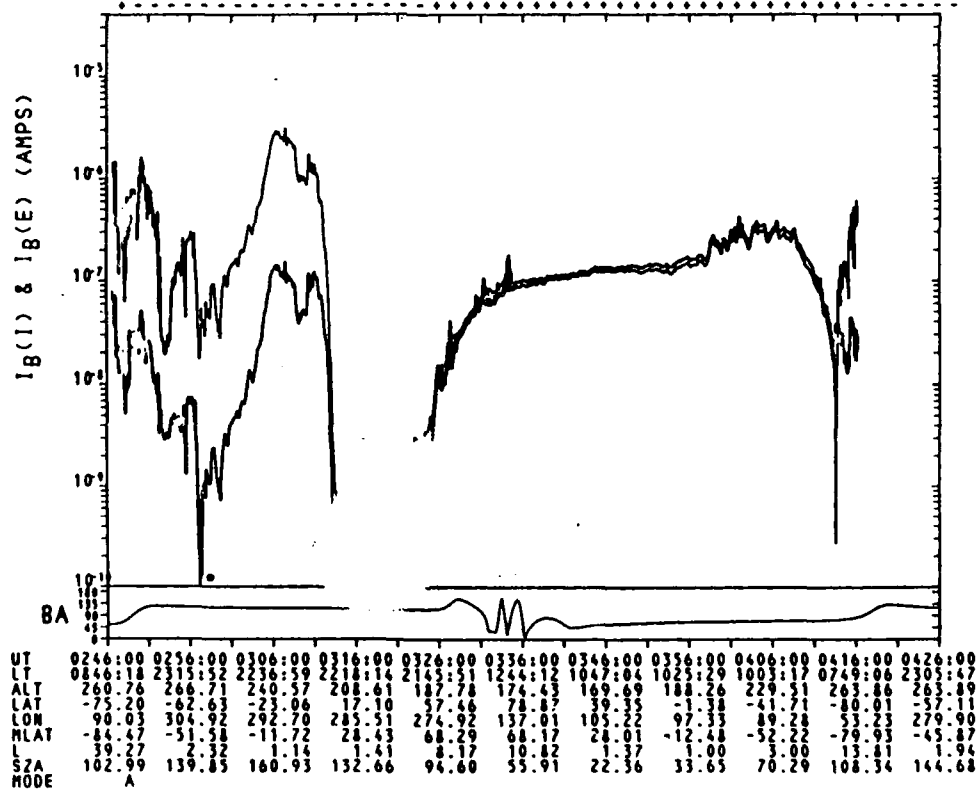


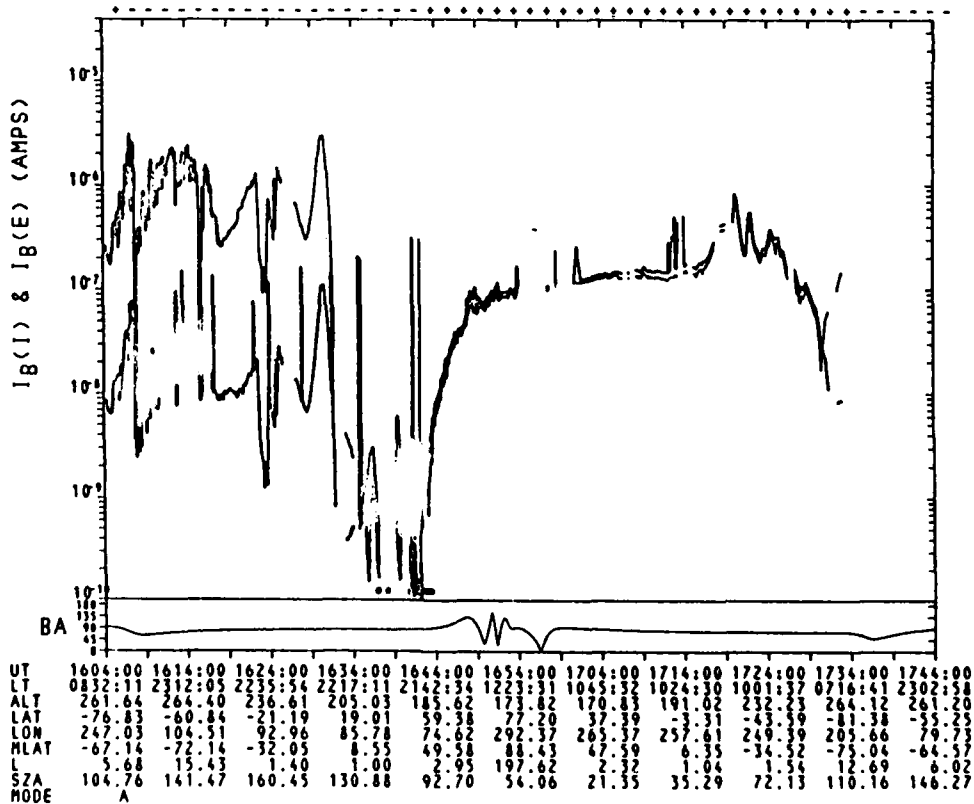
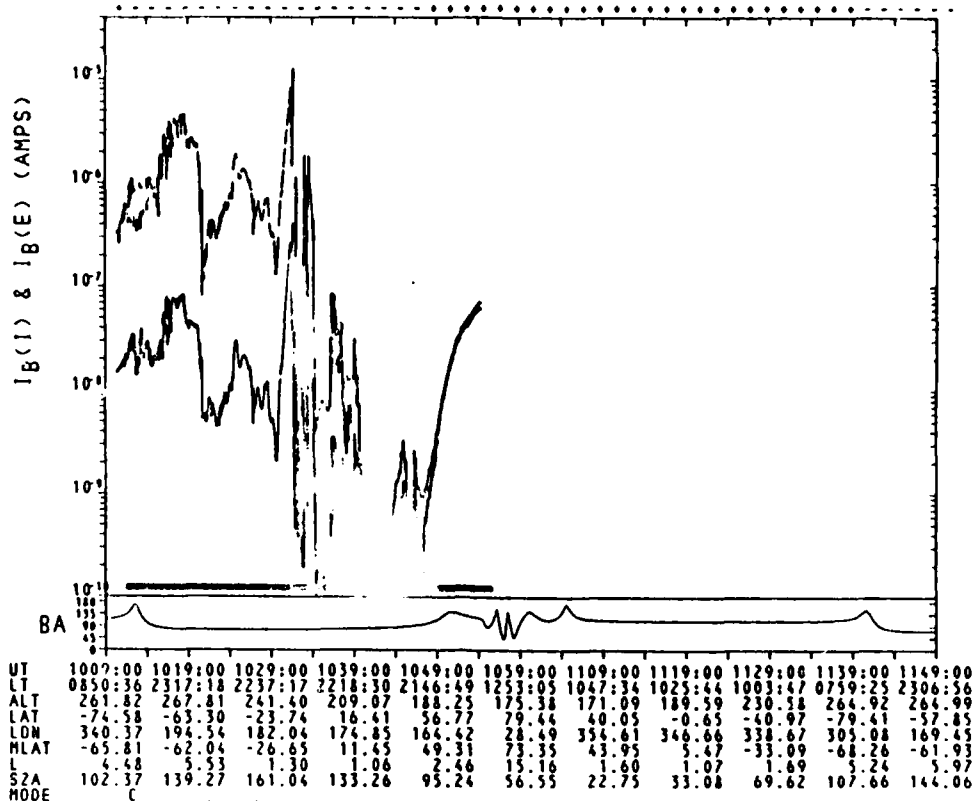
NRL 747

06/13/78

REV 1435

FORMAT A



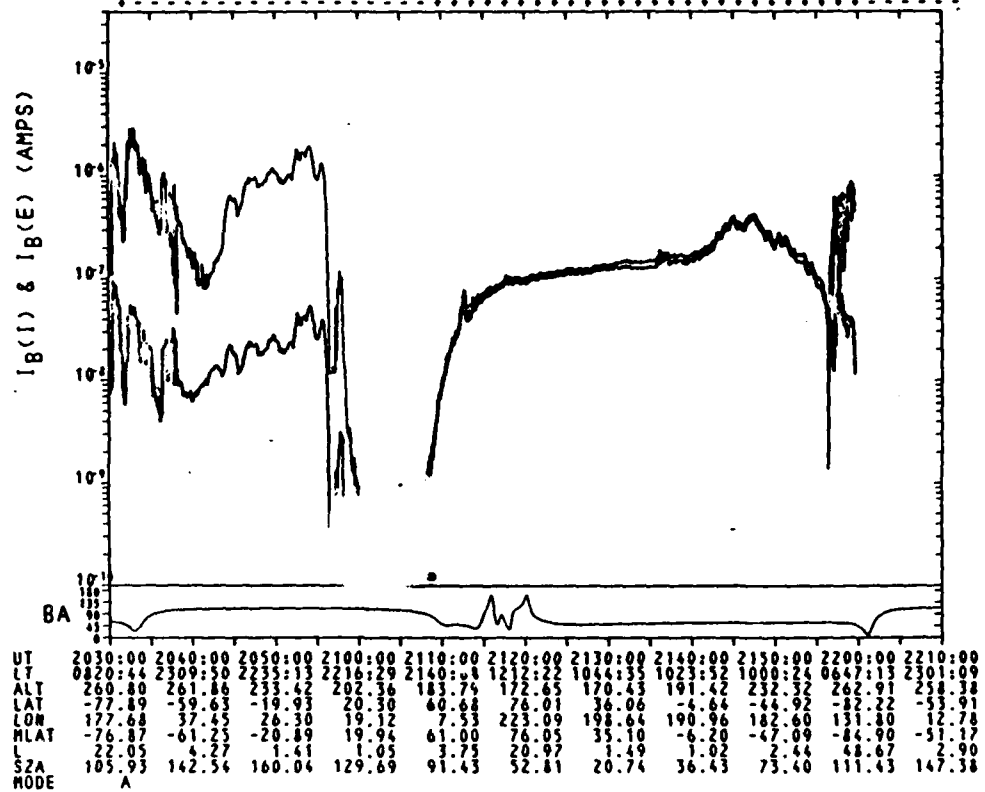


NRL 747

06/13/78

REV 1447

FORMAT A

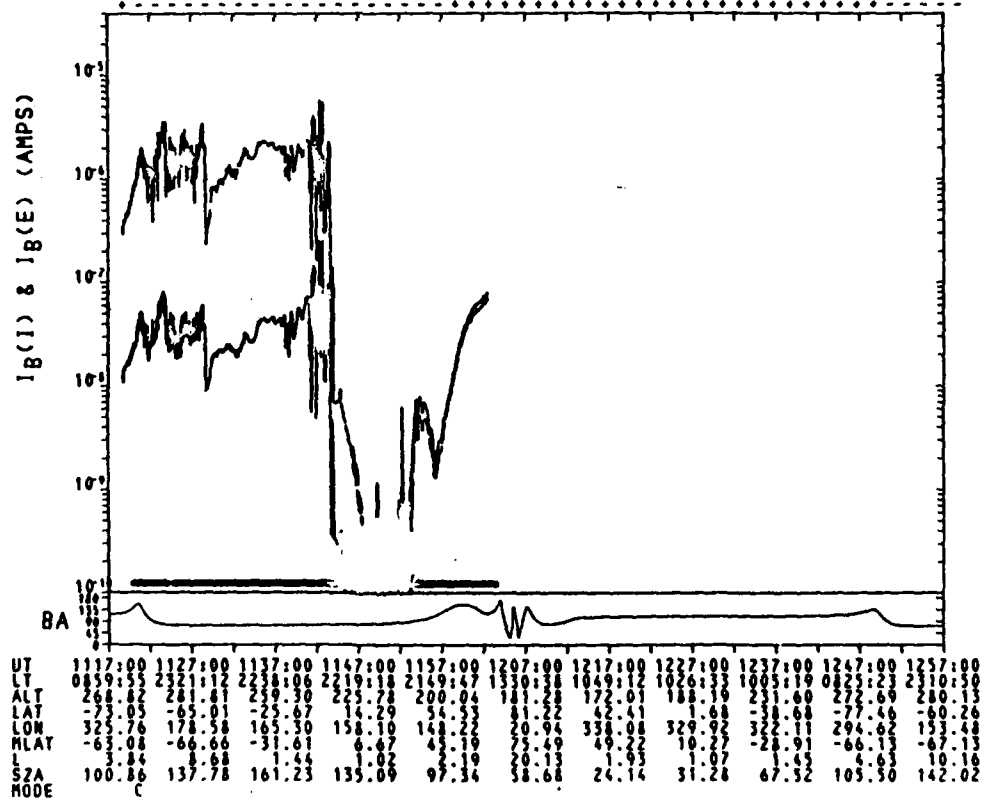


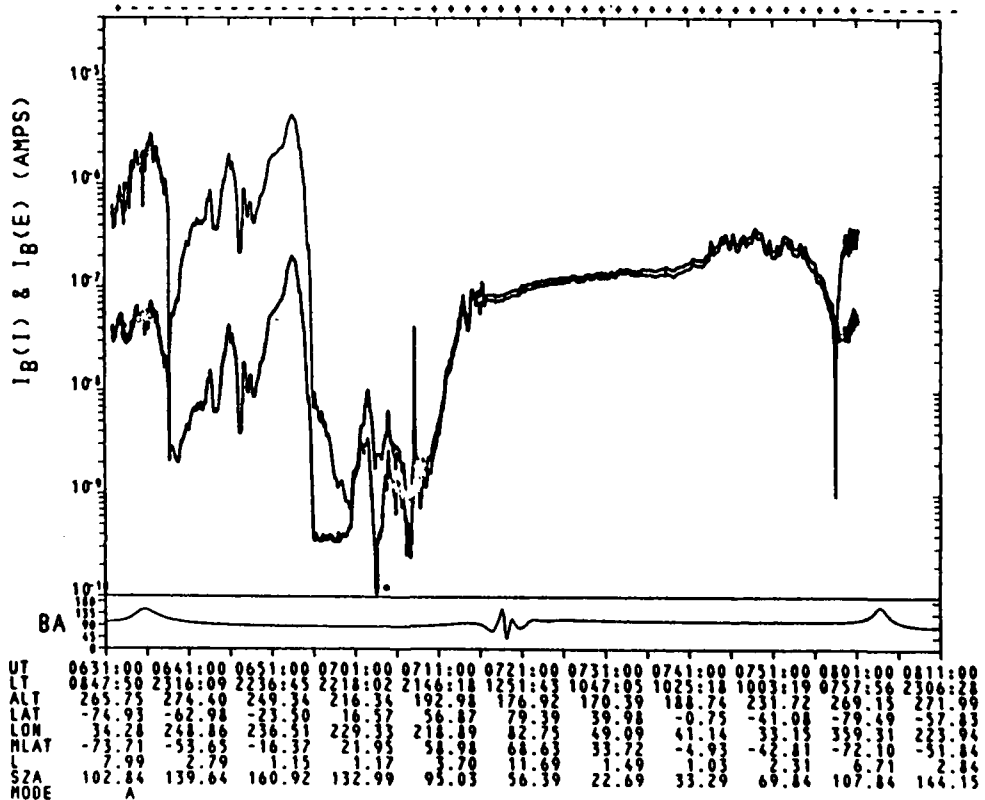
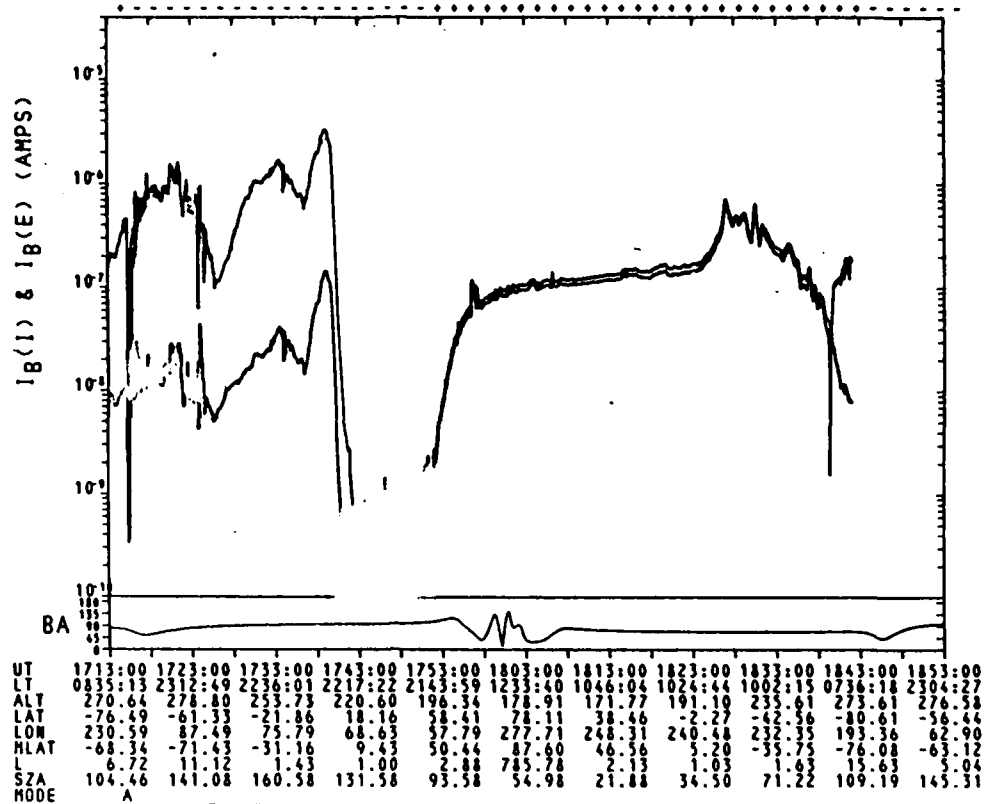
NRL 747

06/14/78

REV 1457

FORMAT C



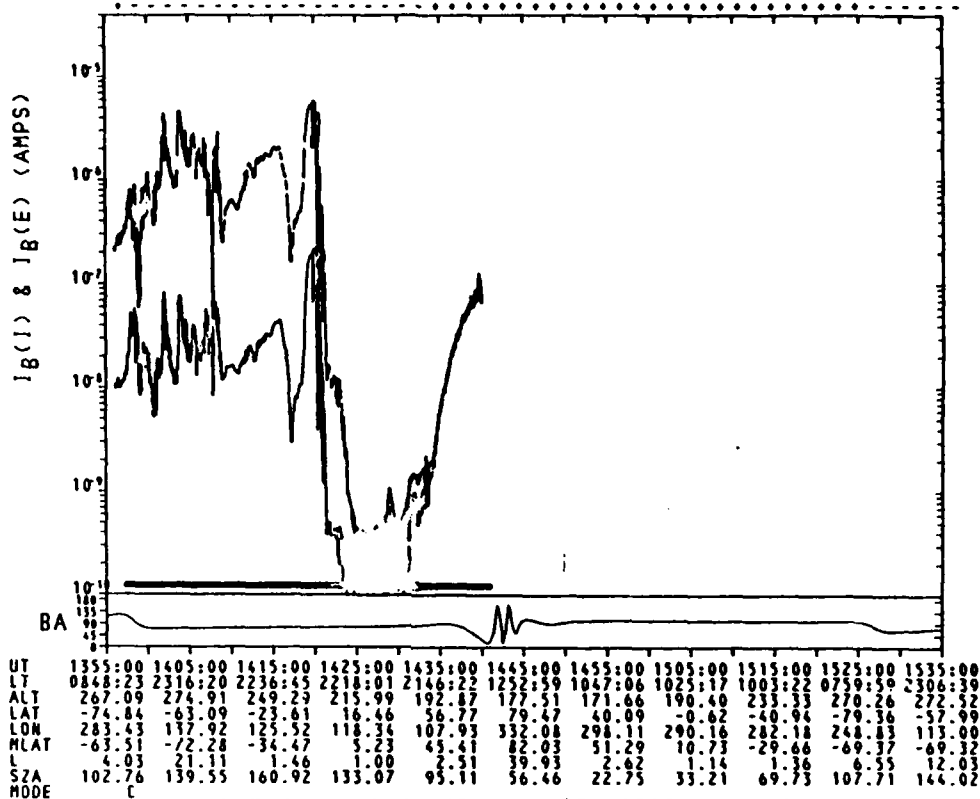


NRL 747

06/15/78

REV 1475

FORMAT C

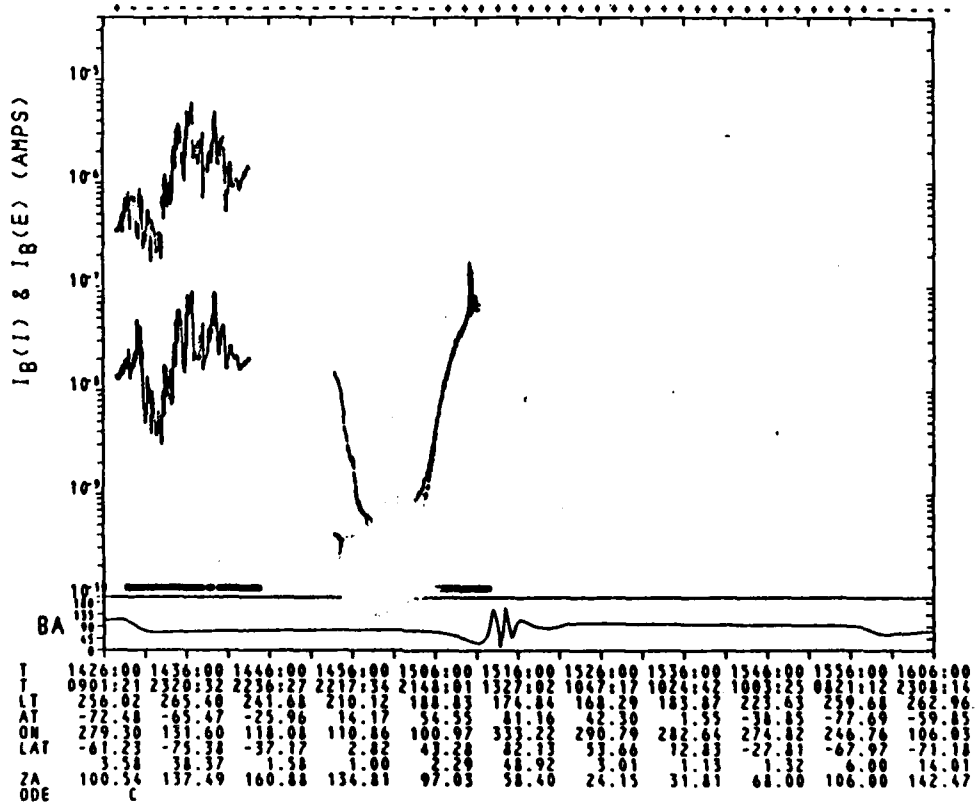


NRL 747

06/22/78

REV 1589

FORMAT C



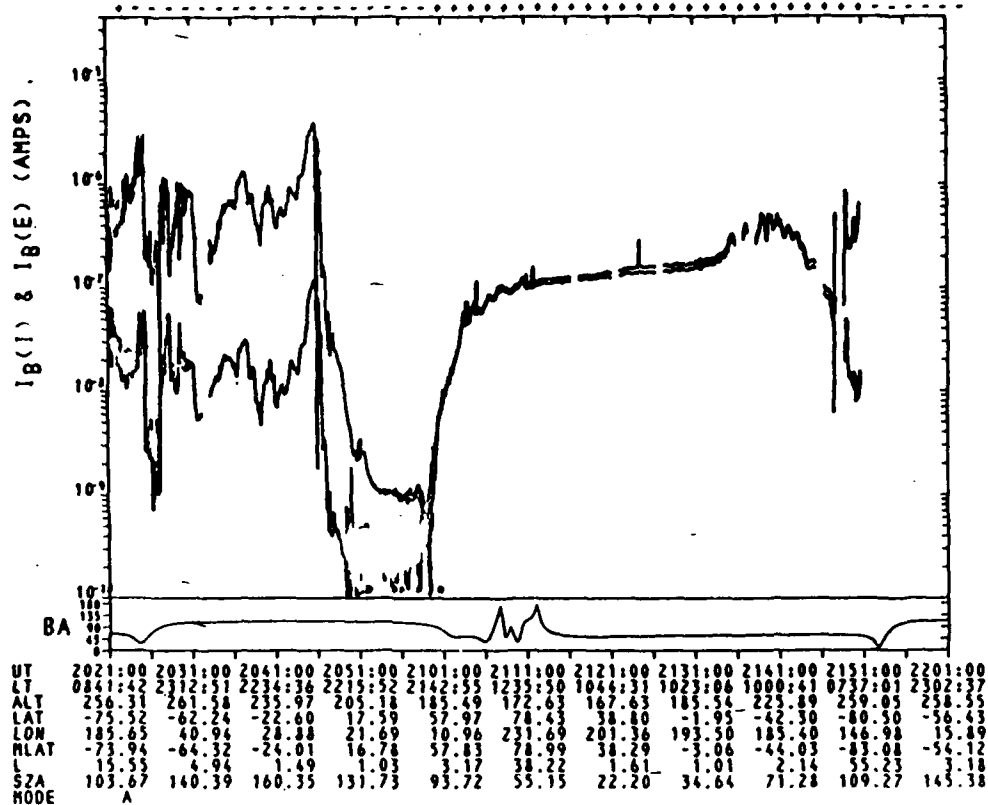


NRL 747

06/22/78

REV 1593

FORMAT A

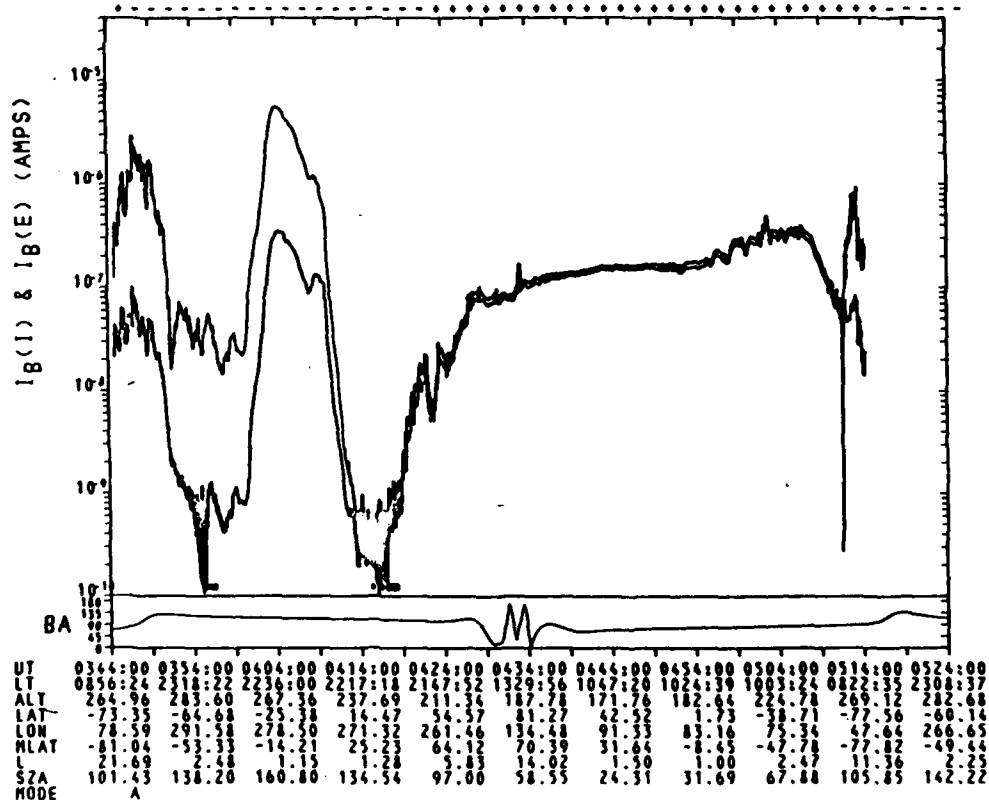


NRL 747

06/23/78

REV 1598

FORMAT A

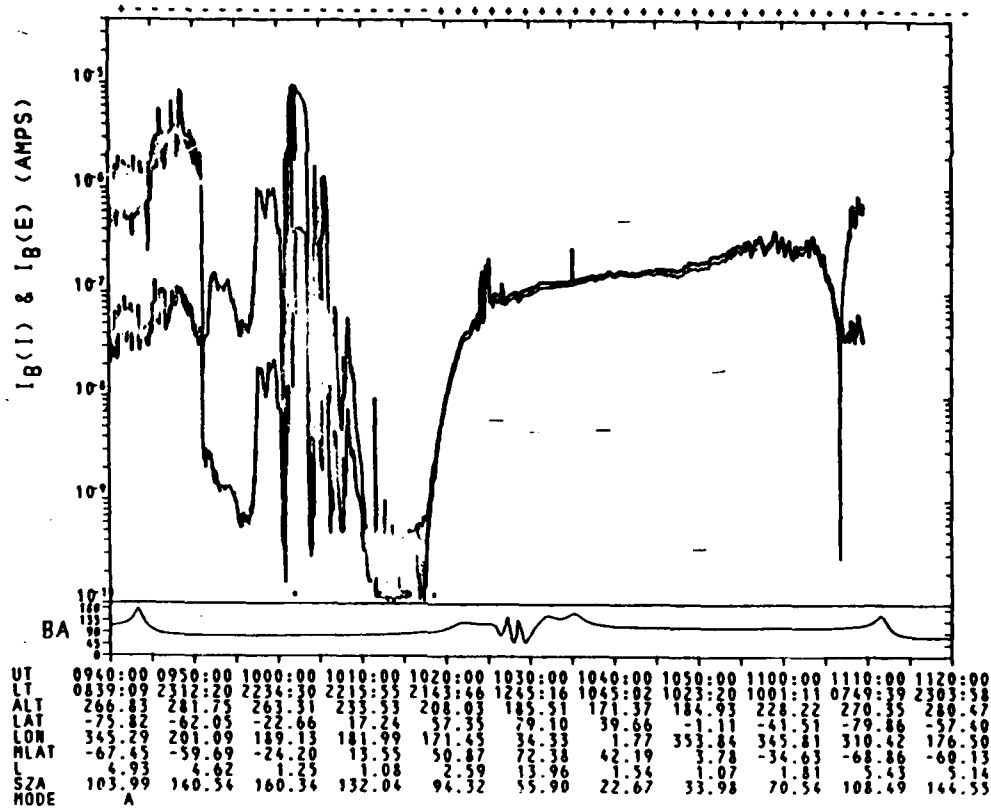


NRL 747

06/23/78

REV 1602

FORMAT A

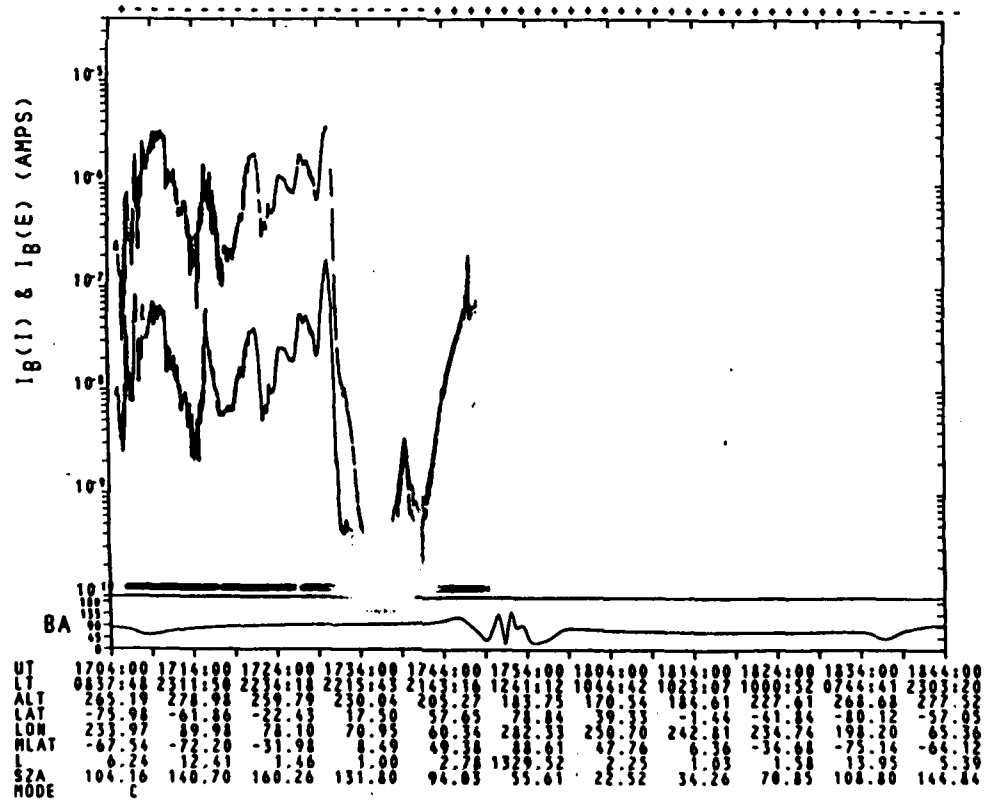


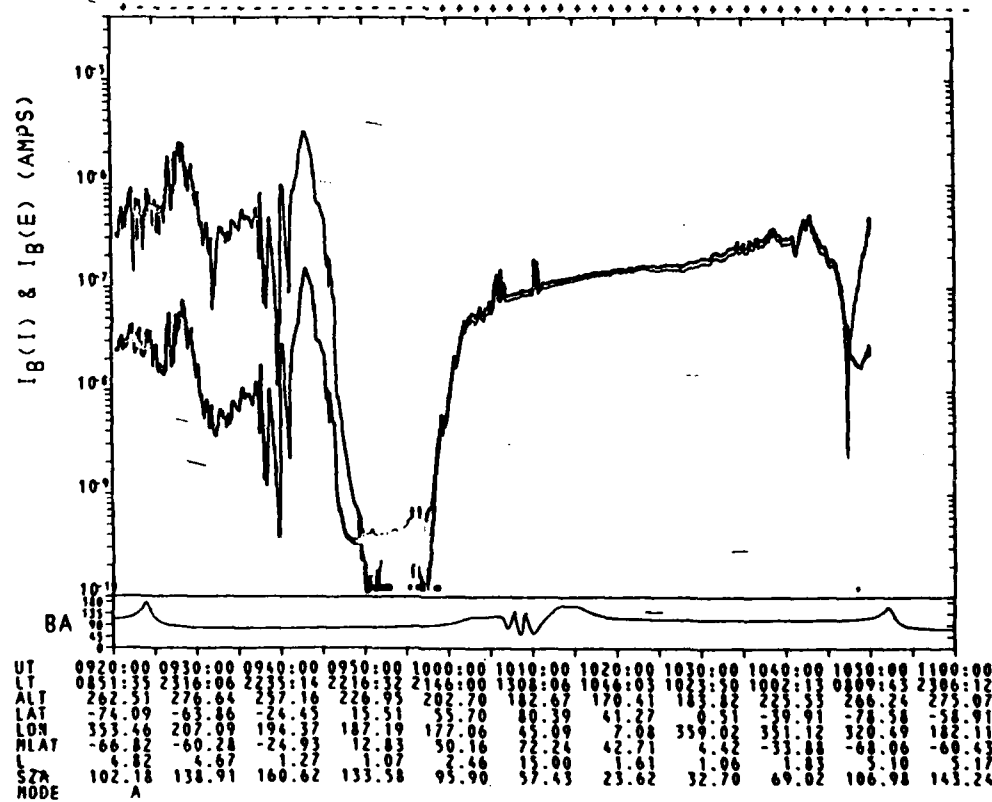
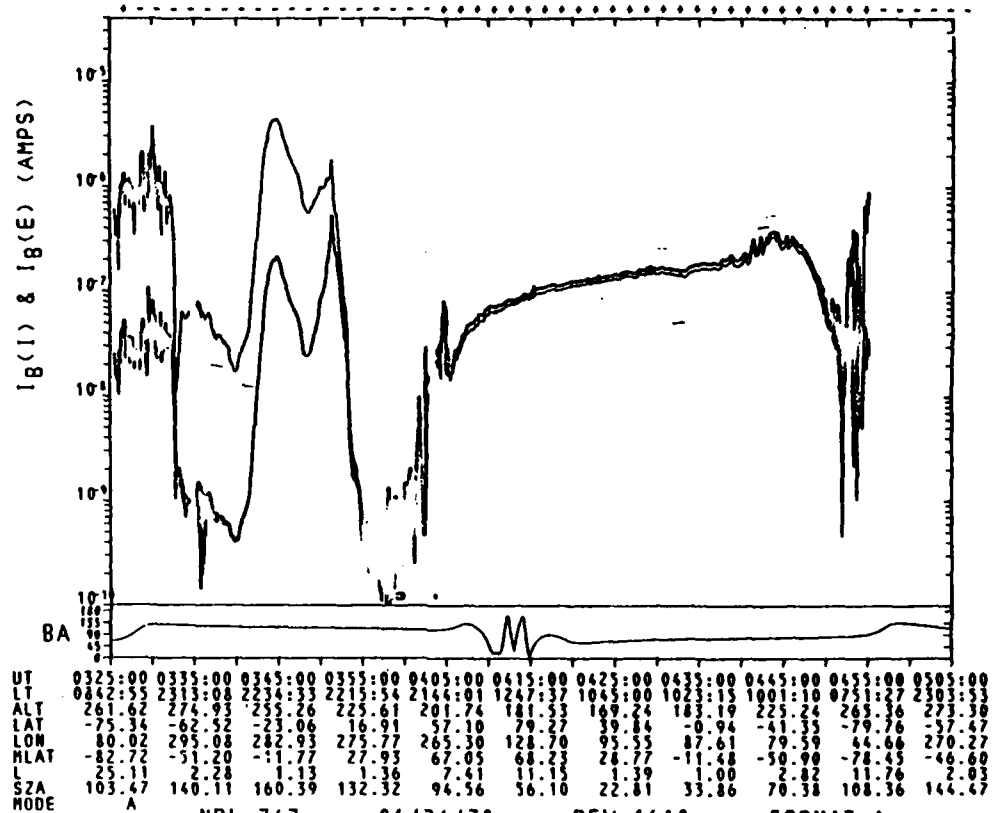
NRL 747

06/23/78

REV 1607

FORMAT C



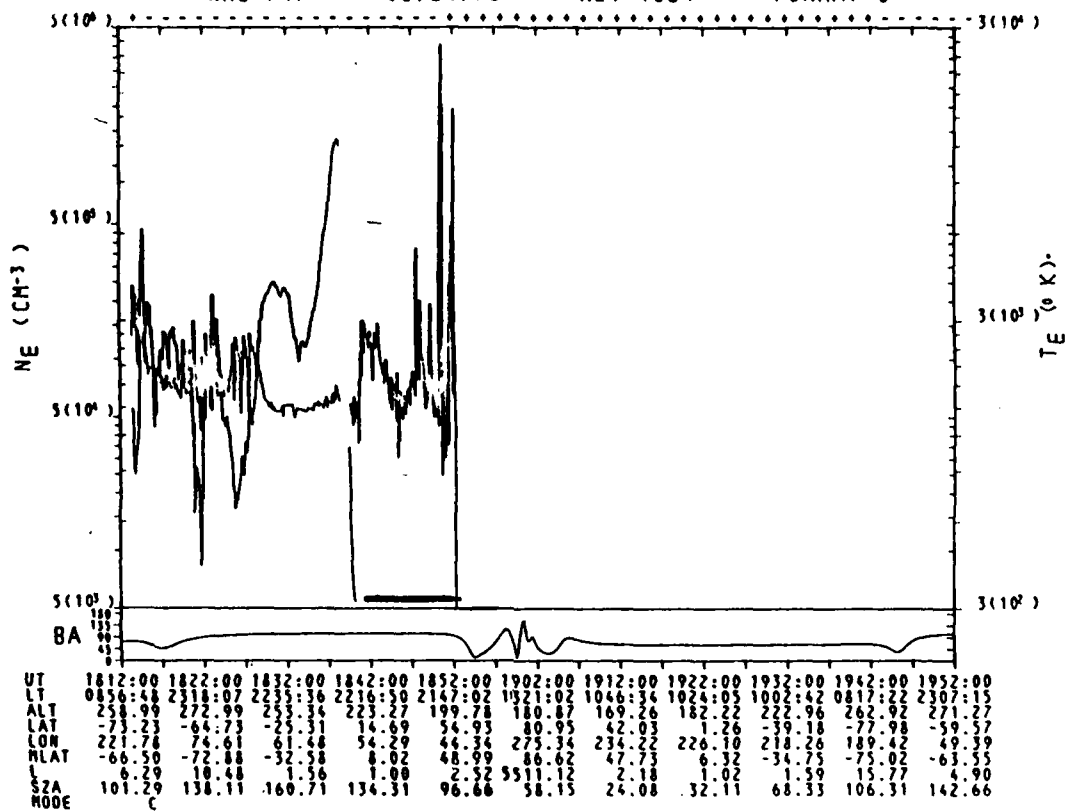


NRL 747

06/24/78

REV 1624

FORMAT C

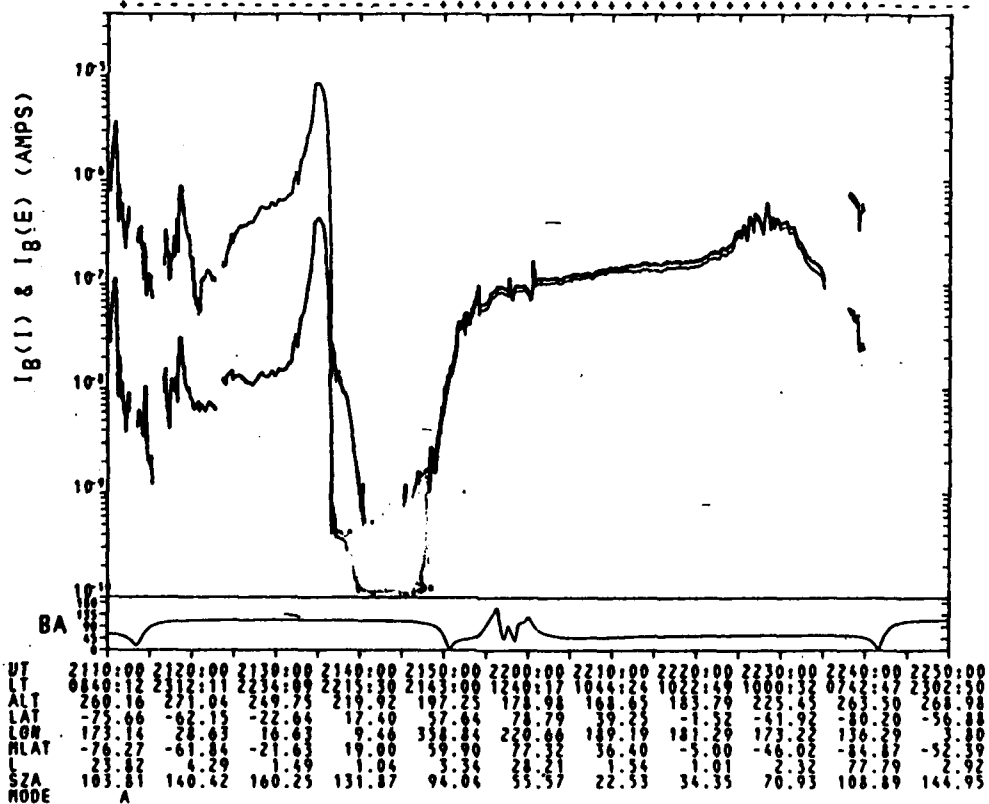


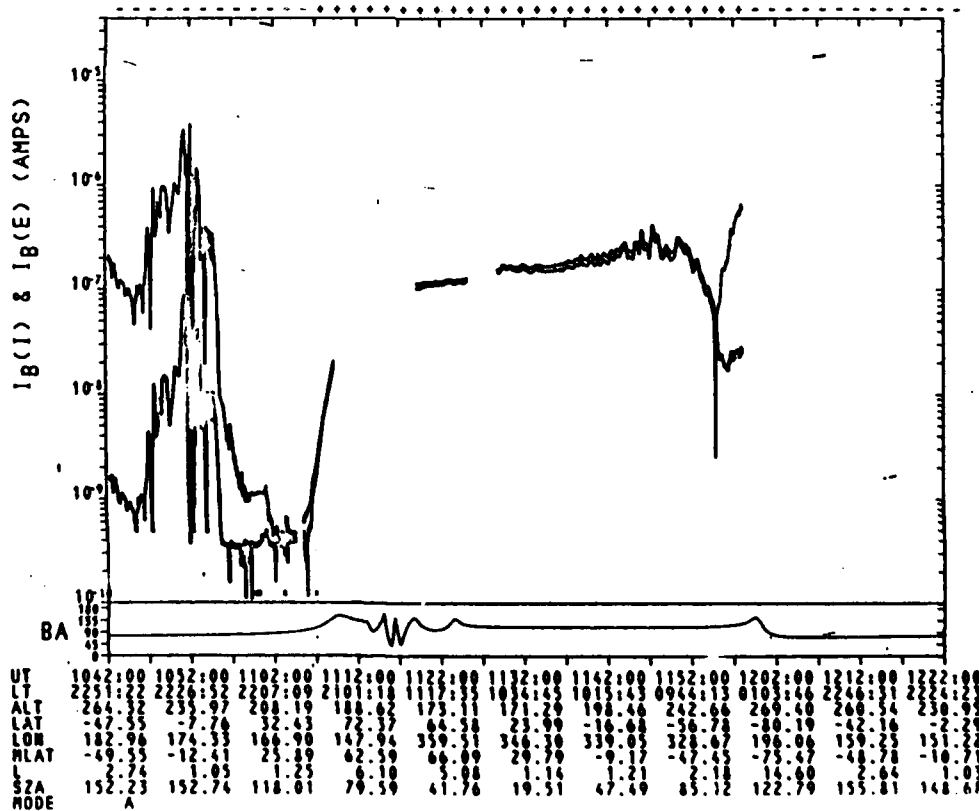
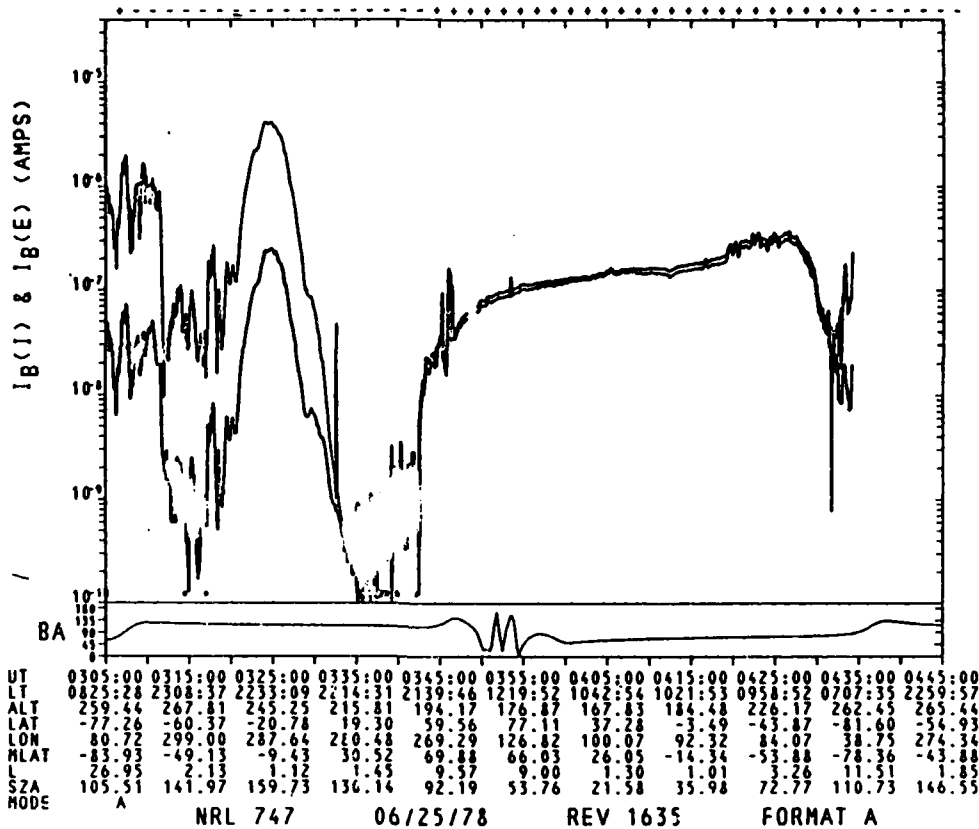
NRL 747

06/24/78

REV 1626

FORMAT A



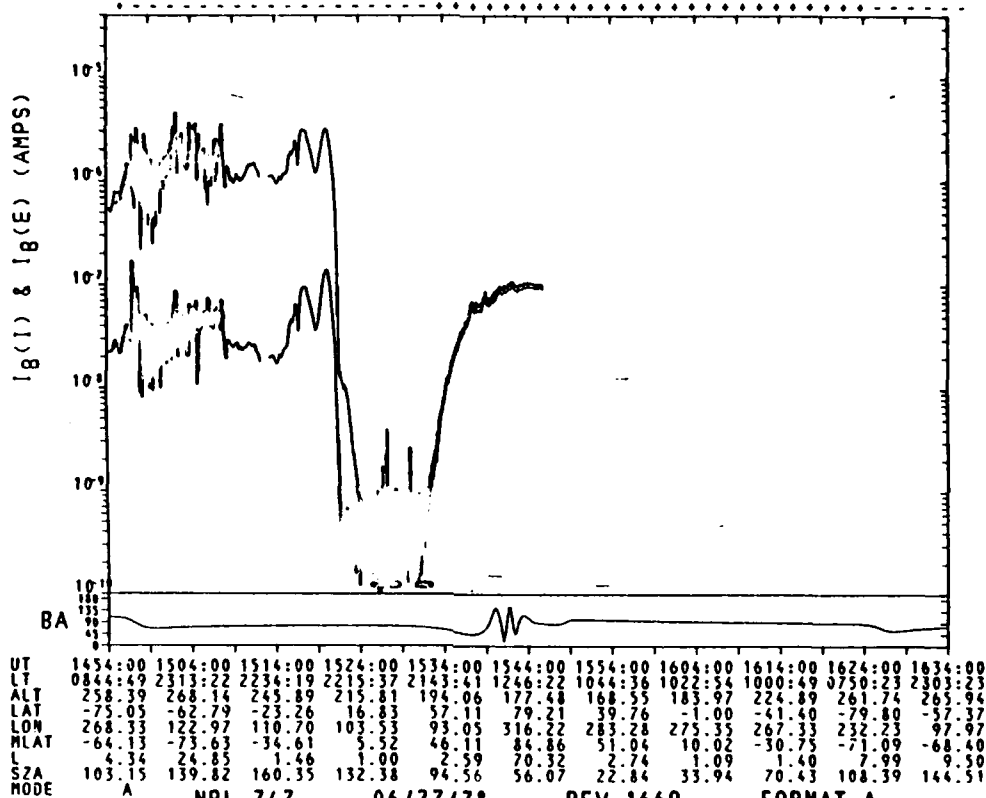


NRL 747

06/25/78

REV 1638

FORMAT A

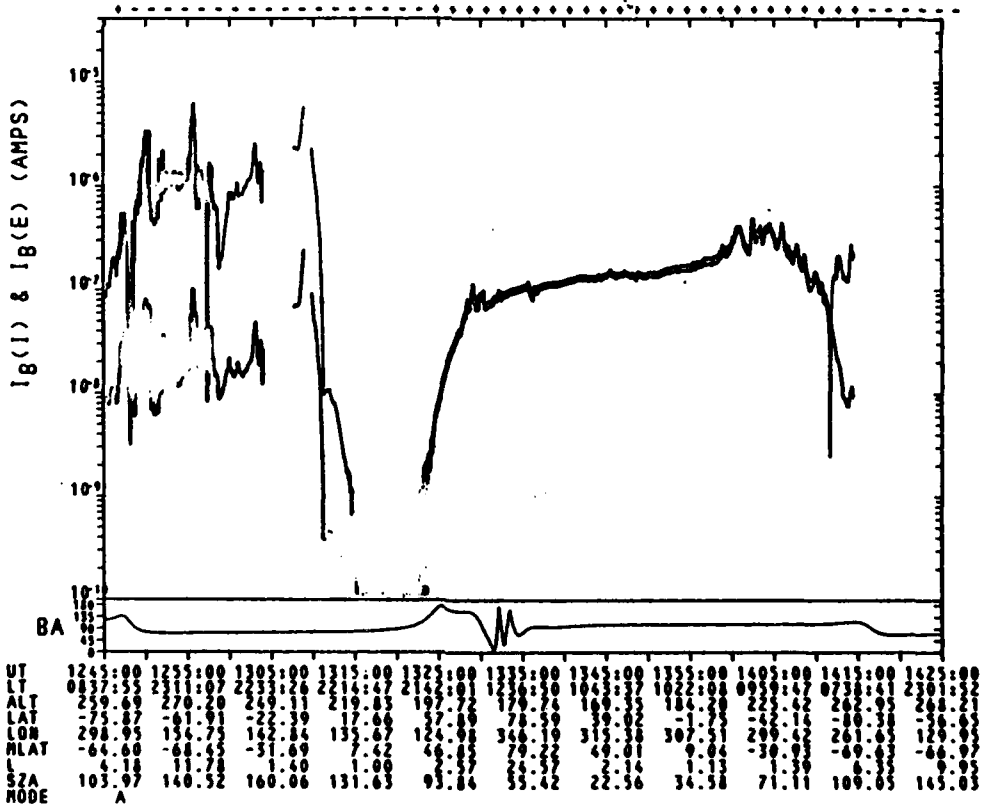


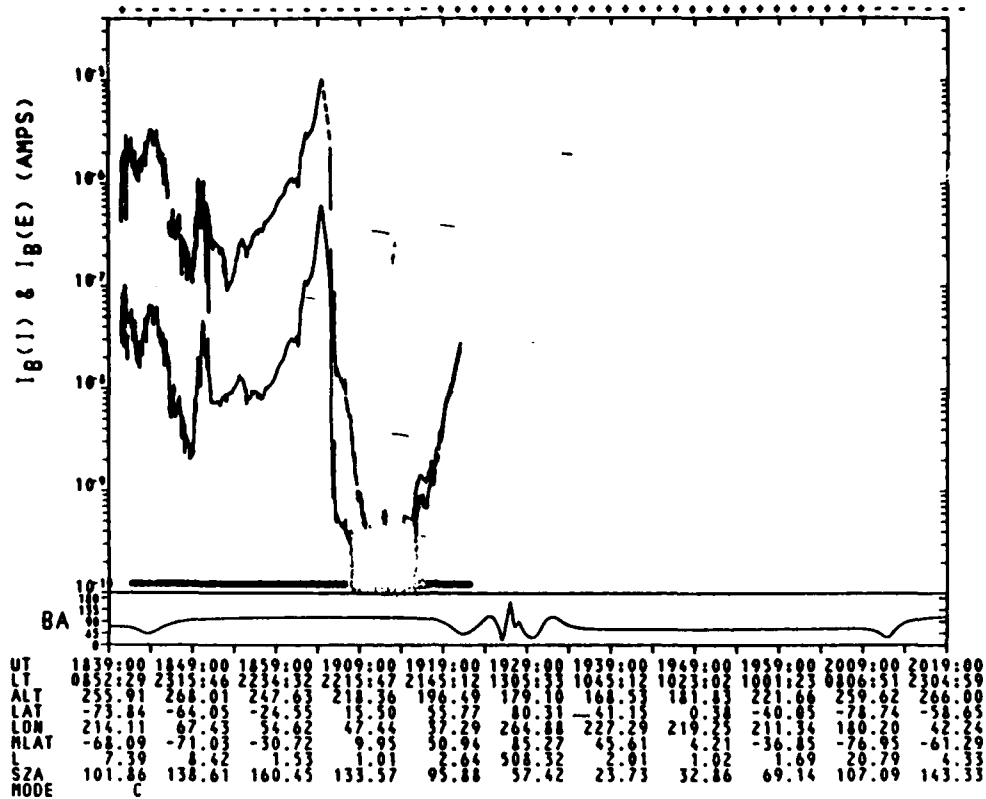
NRL 747

06/27/78

REV 1669

FORMAT A



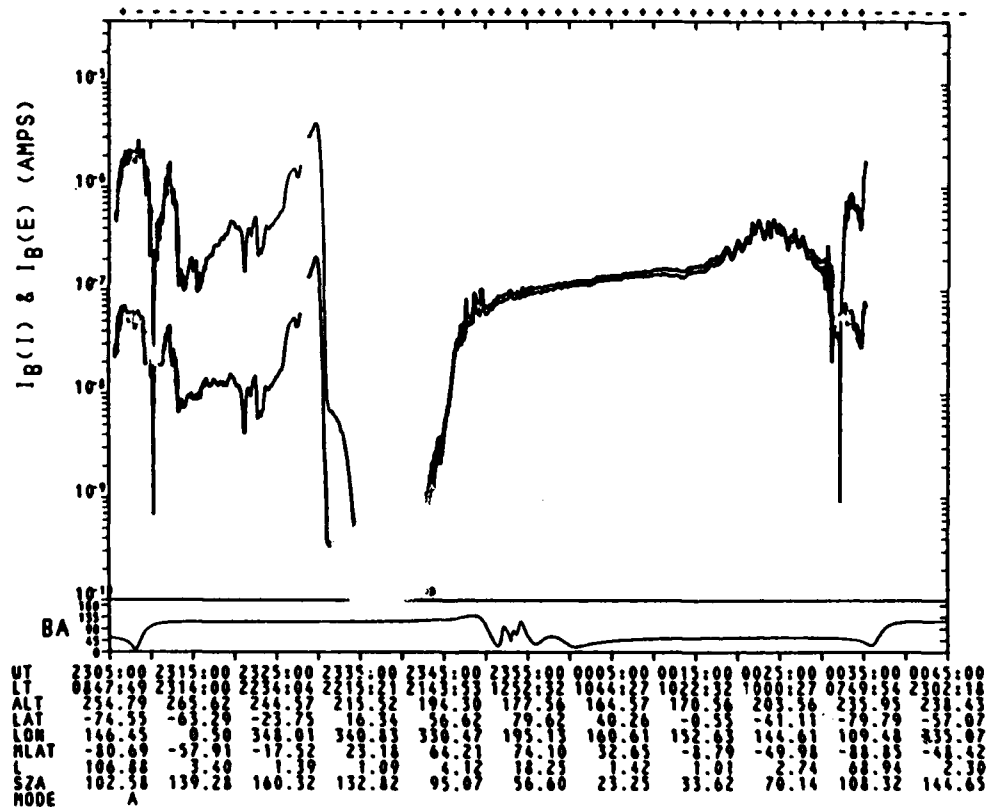


NRL 747

06/27/78

REV 1676

FORMAT A

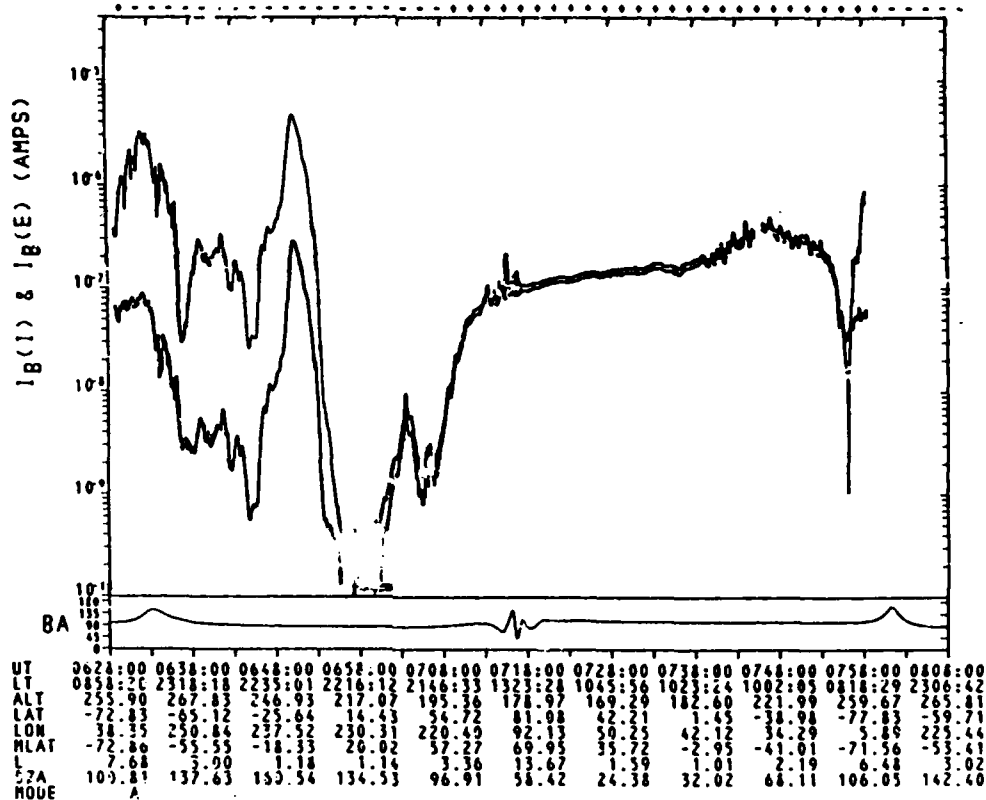


NRL 747

06/28/78

REV 1681

FORMAT A

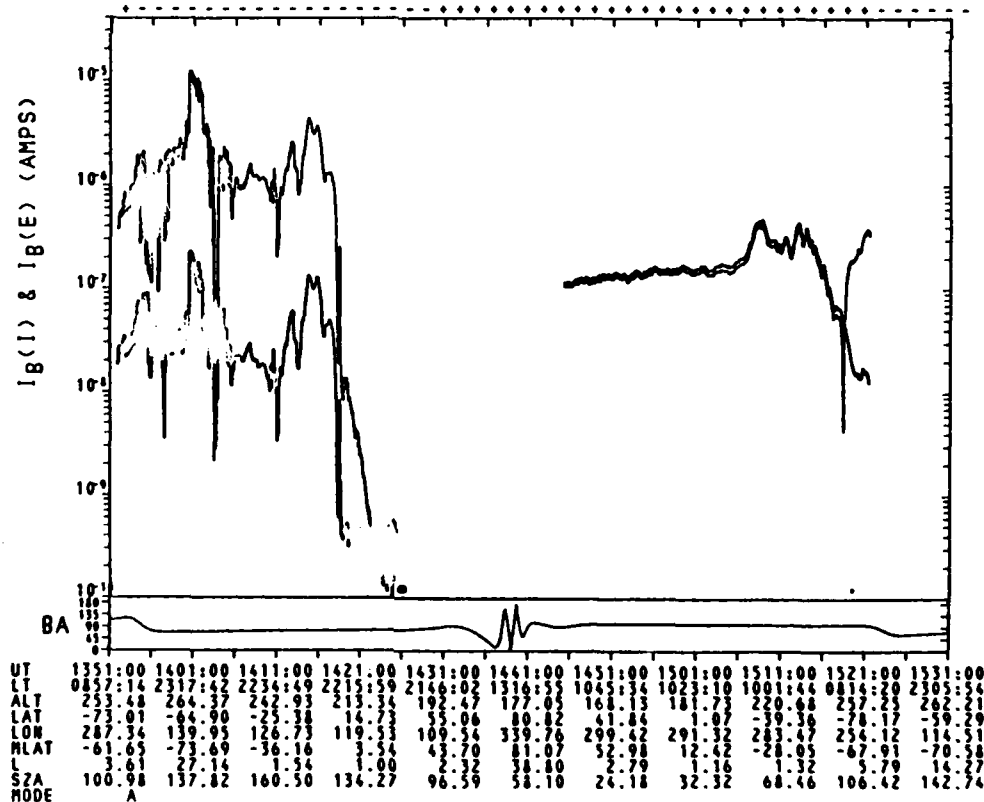


NRL 747

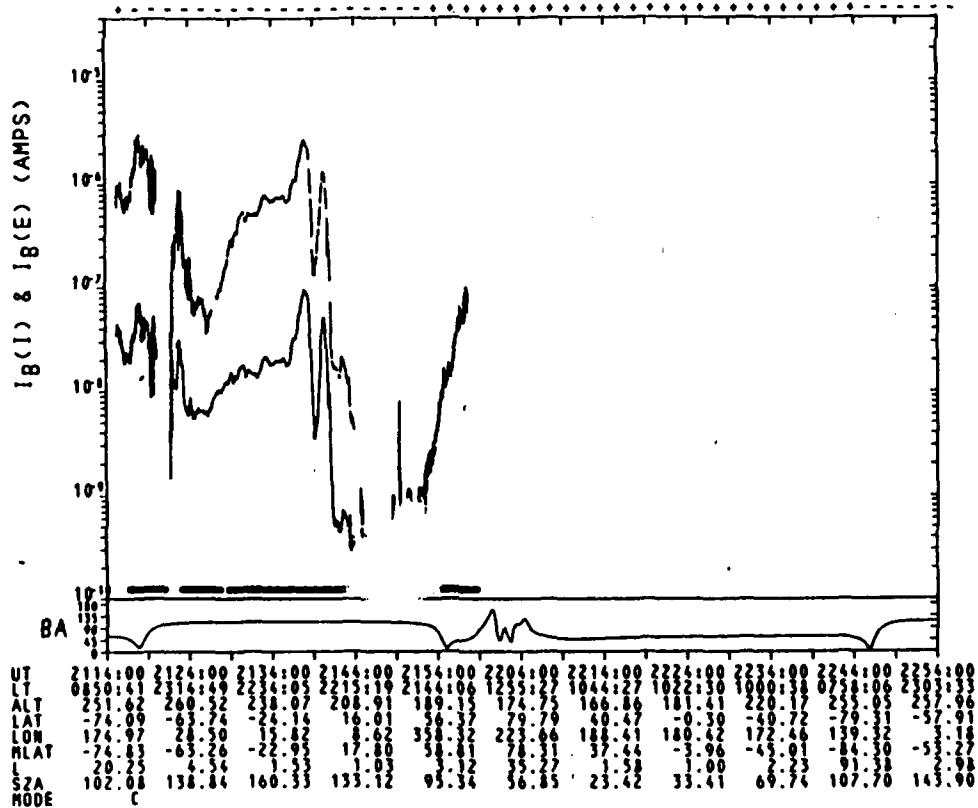
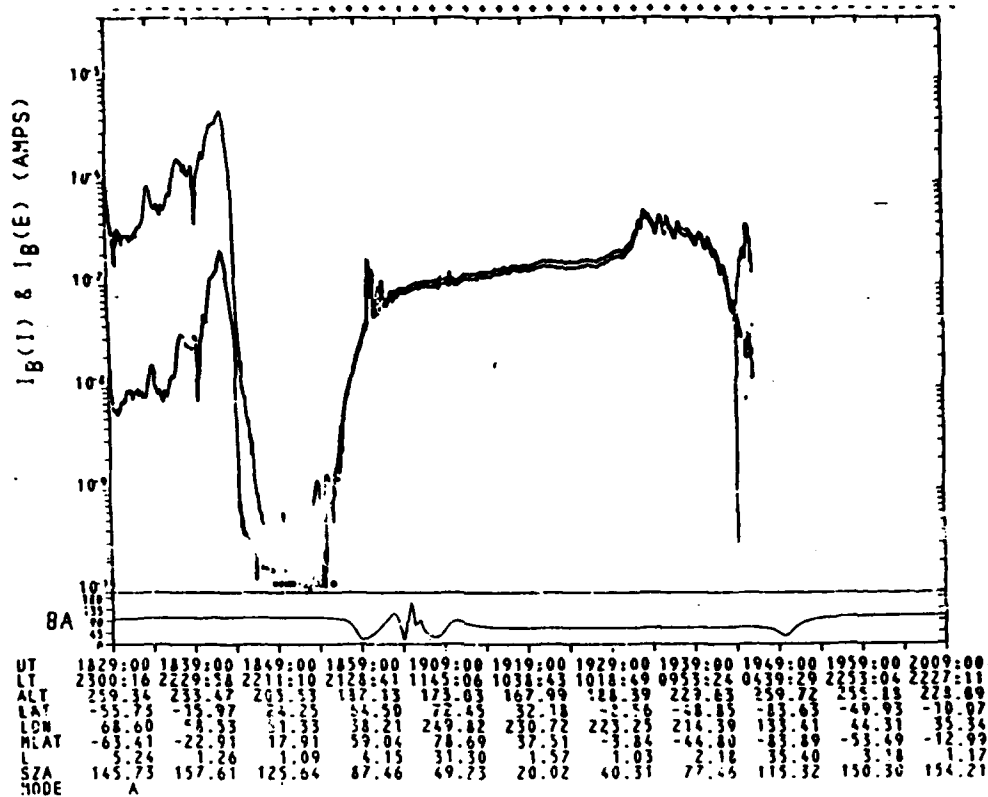
06/28/78

REV 1686

FORMAT A





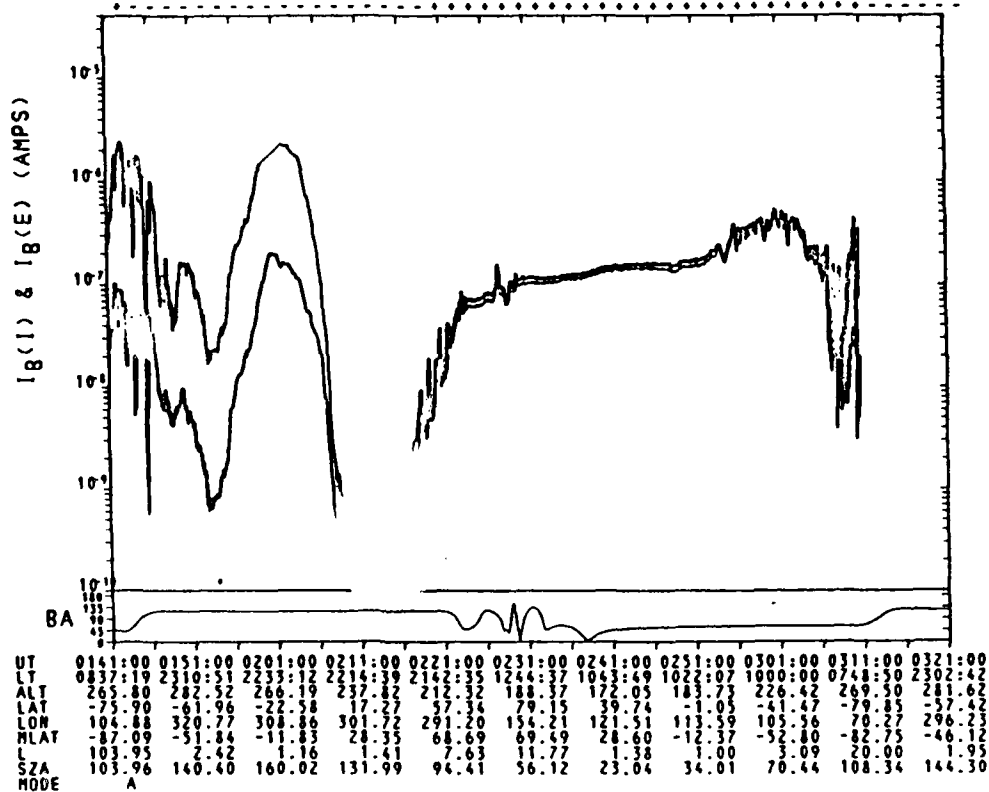


NRL 747

06/29/78

REV 1694

FORMAT A

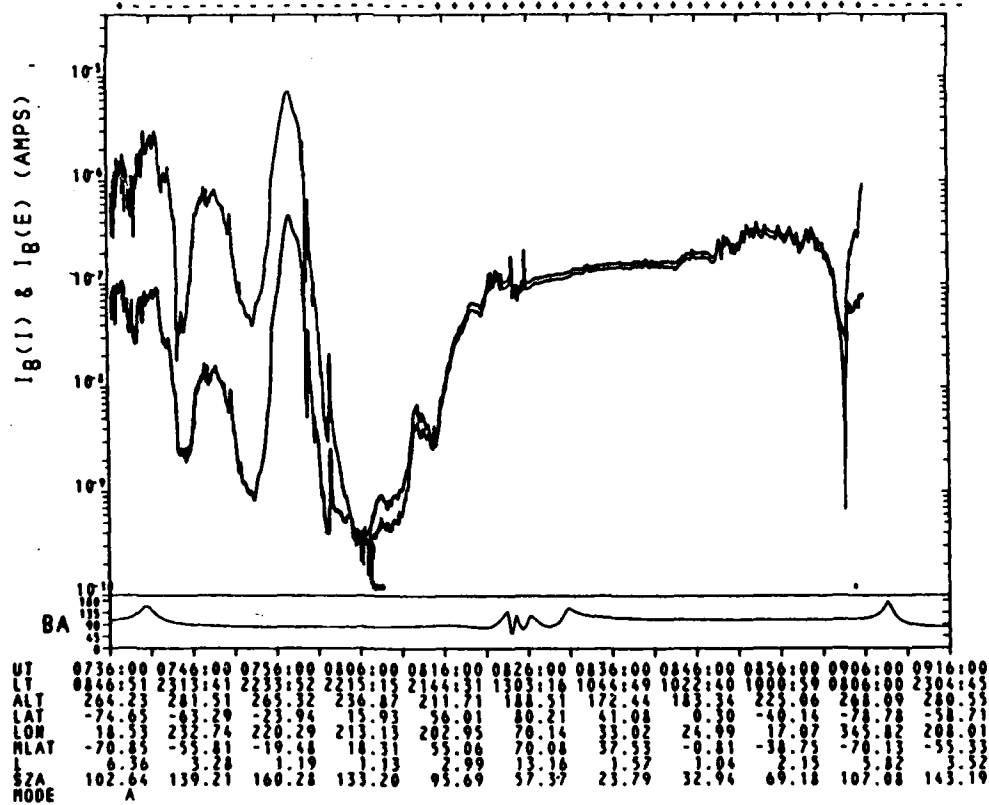


NRL 747

06/29/78

REV 1698

FORMAT A

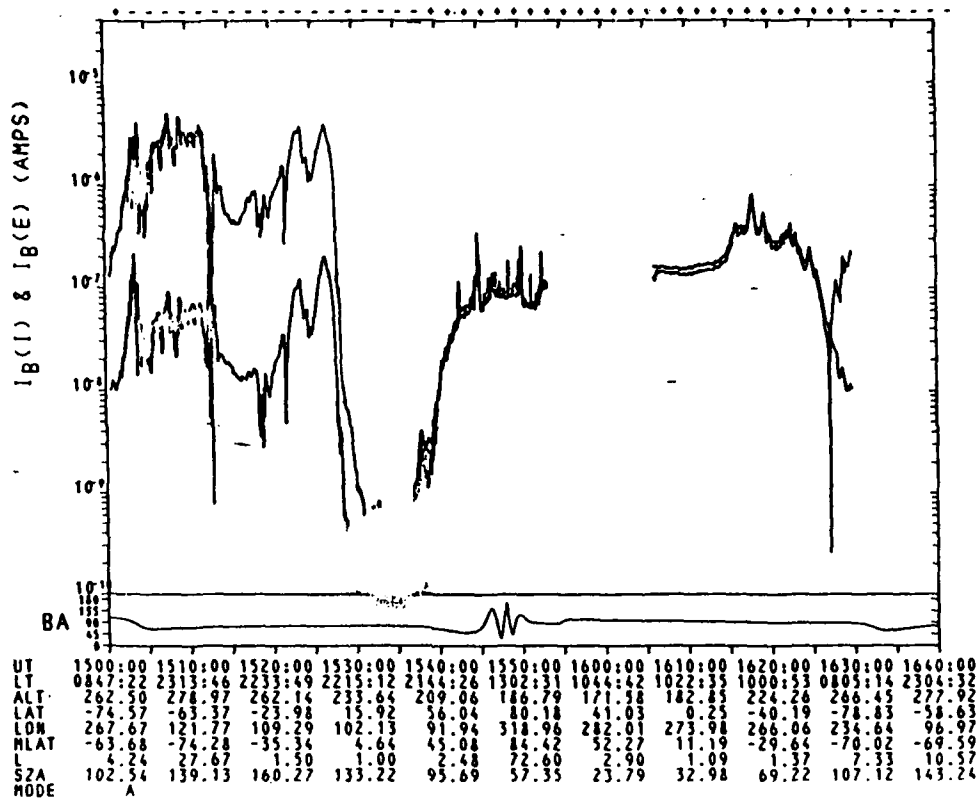


NRL 747

06/29/78

REV 1703

FORMAT A

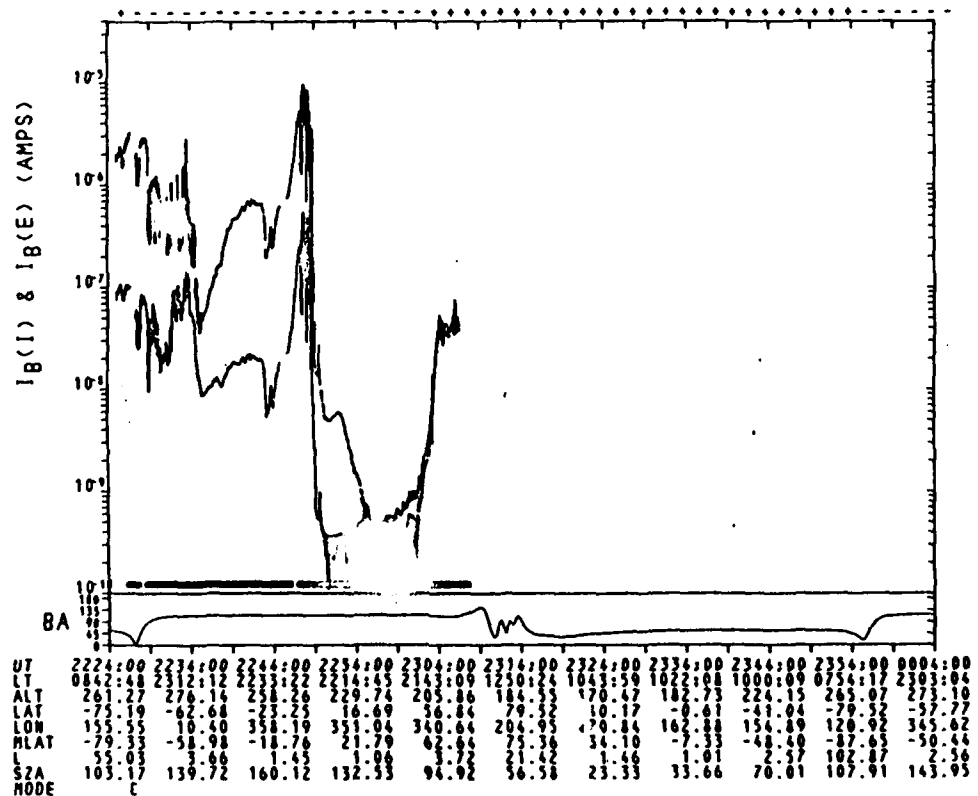


NRL 747

06/29/78

REV 1708

FORMAT C

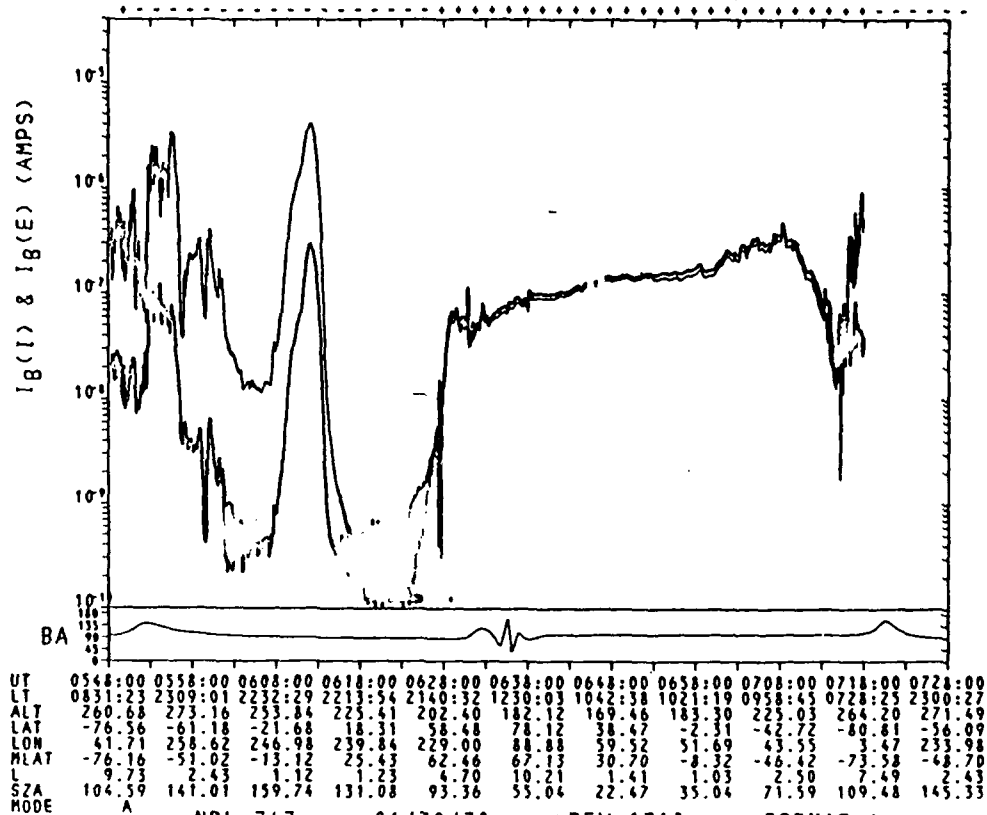


NRL 747

06/30/78

REV 1713

FORMAT A

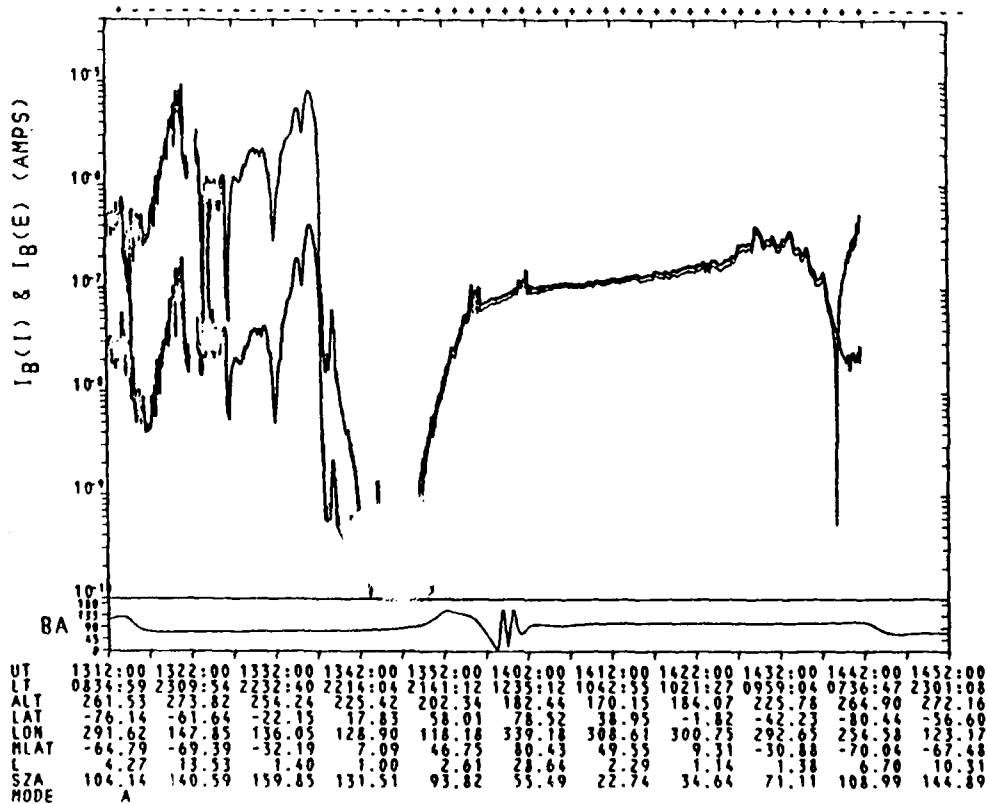


NRL 747

06/30/78

REV 1718

FORMAT A

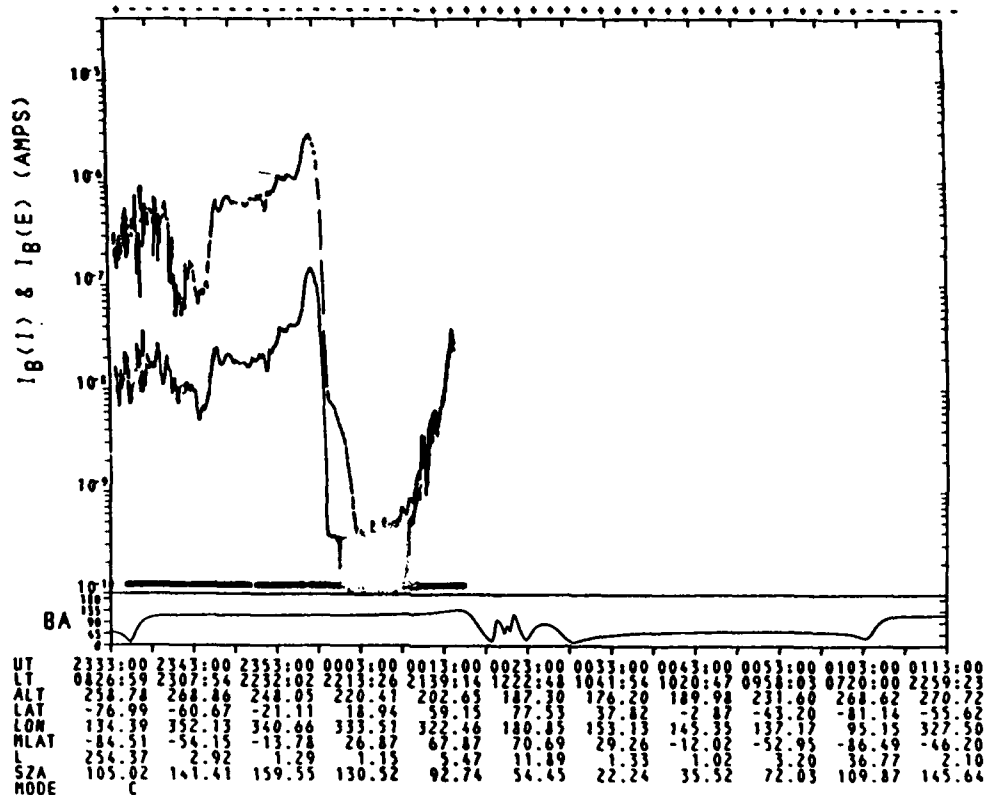


NRL 747

06/30/78

REV 1725

FORMAT C

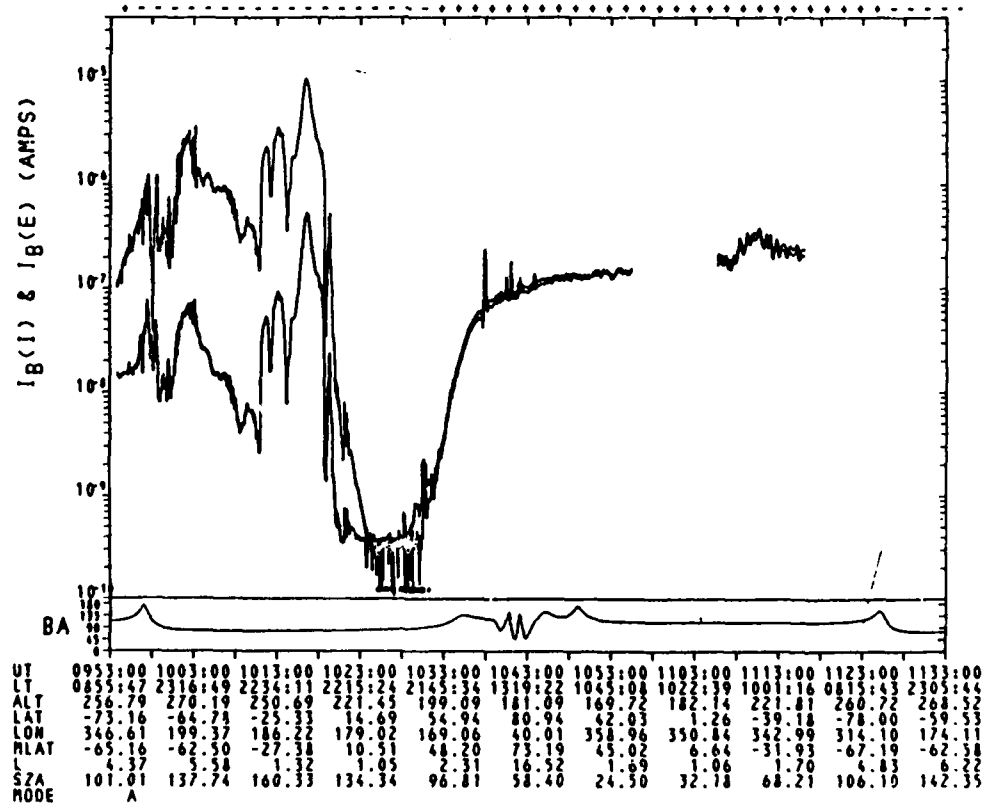


NRL 747

07/01/78

REV 1732

FORMAT A

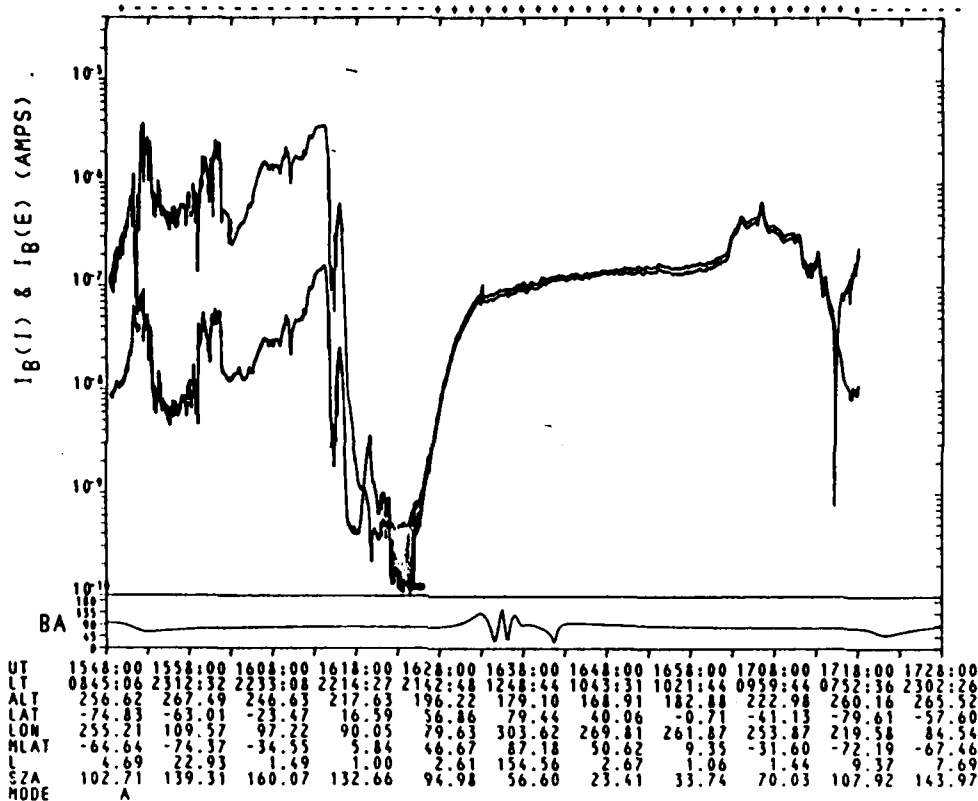


NRL 747

07/01/78

REV 1737

FORMAT A

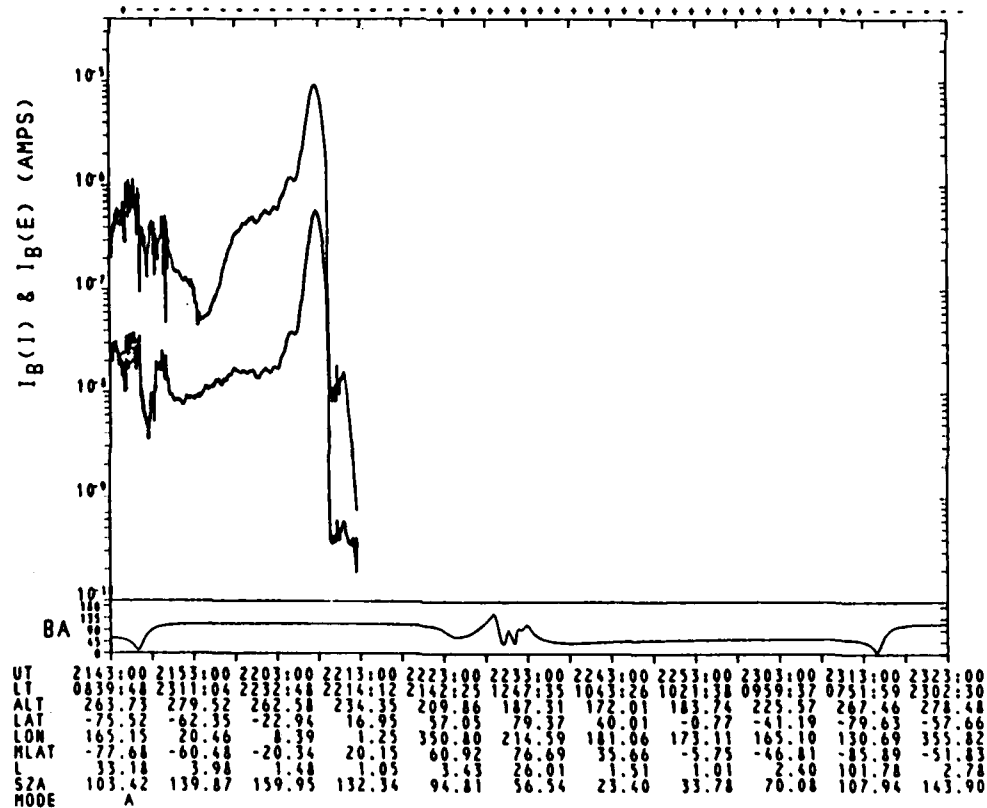


NRL 747

07/01/78

REV 1740

FORMAT A

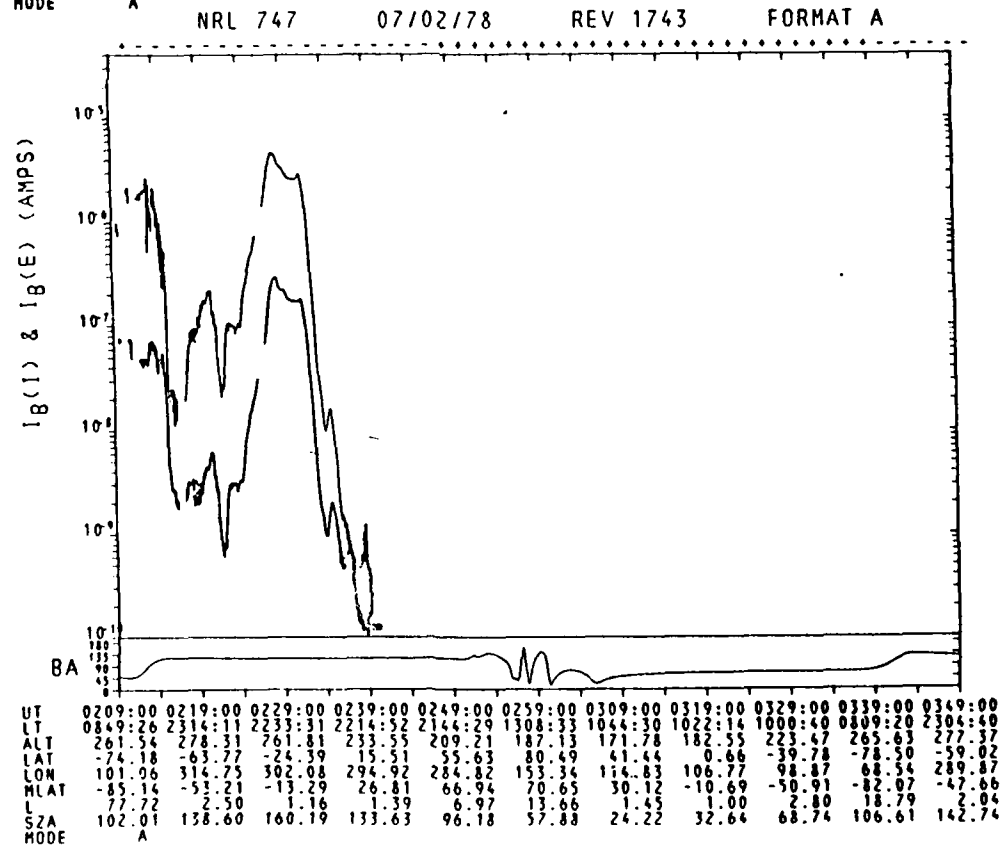
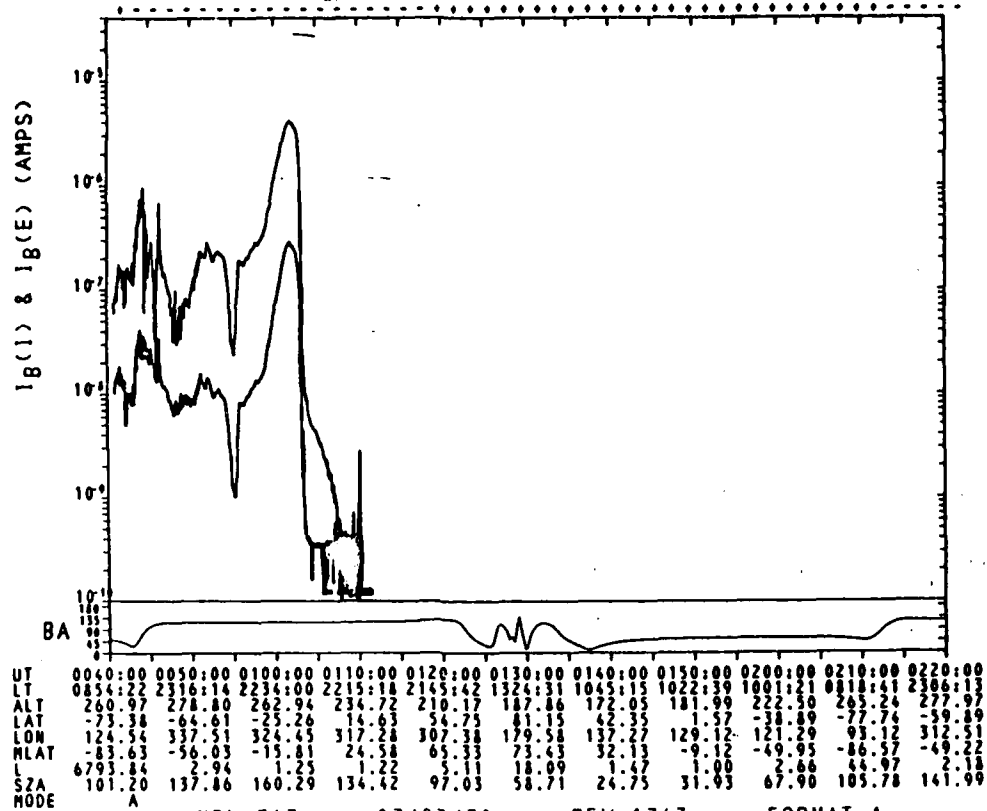


NRL 747

07/02/78

REV 1742

FORMAT A

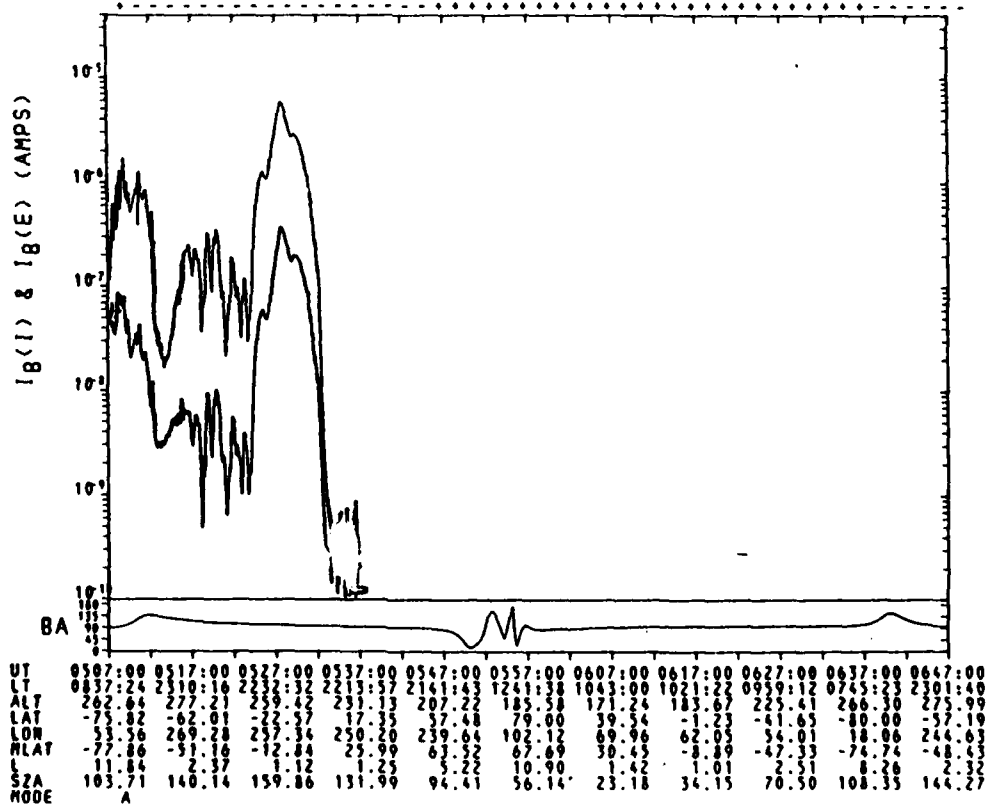
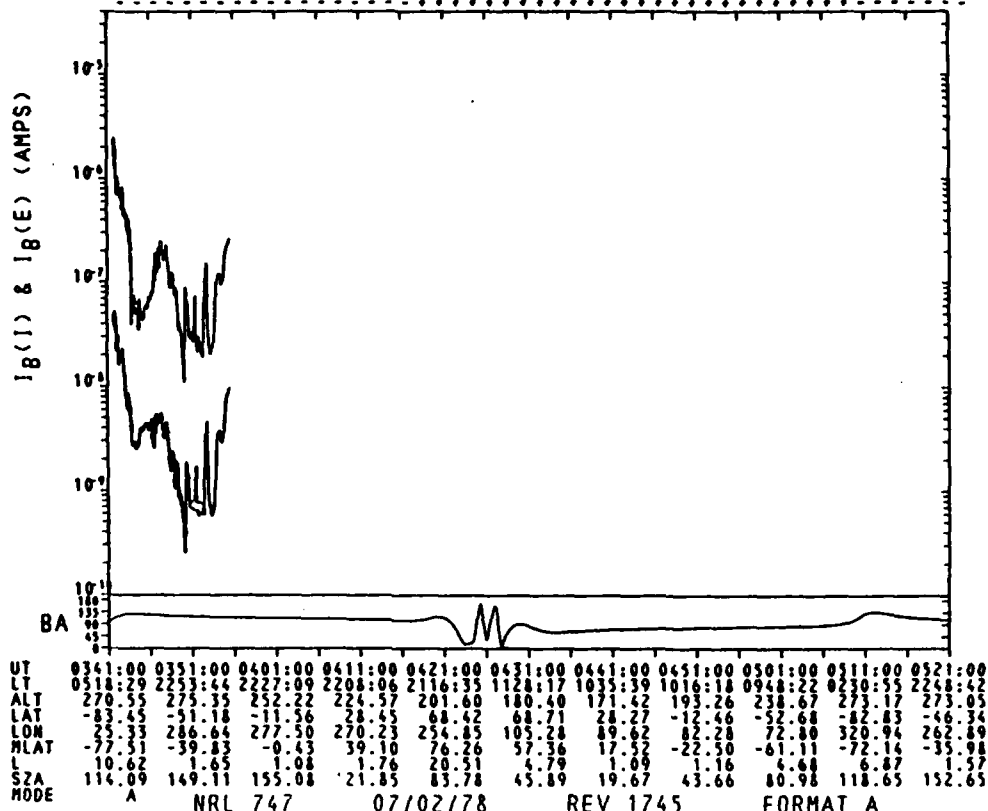


NRL 747

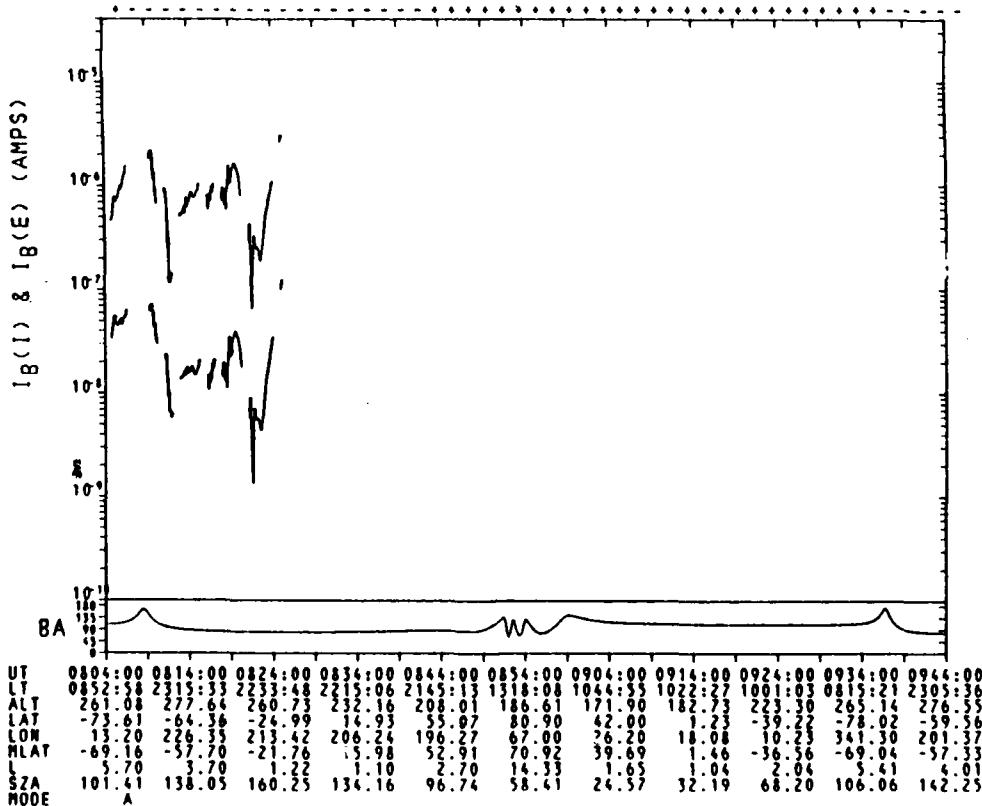
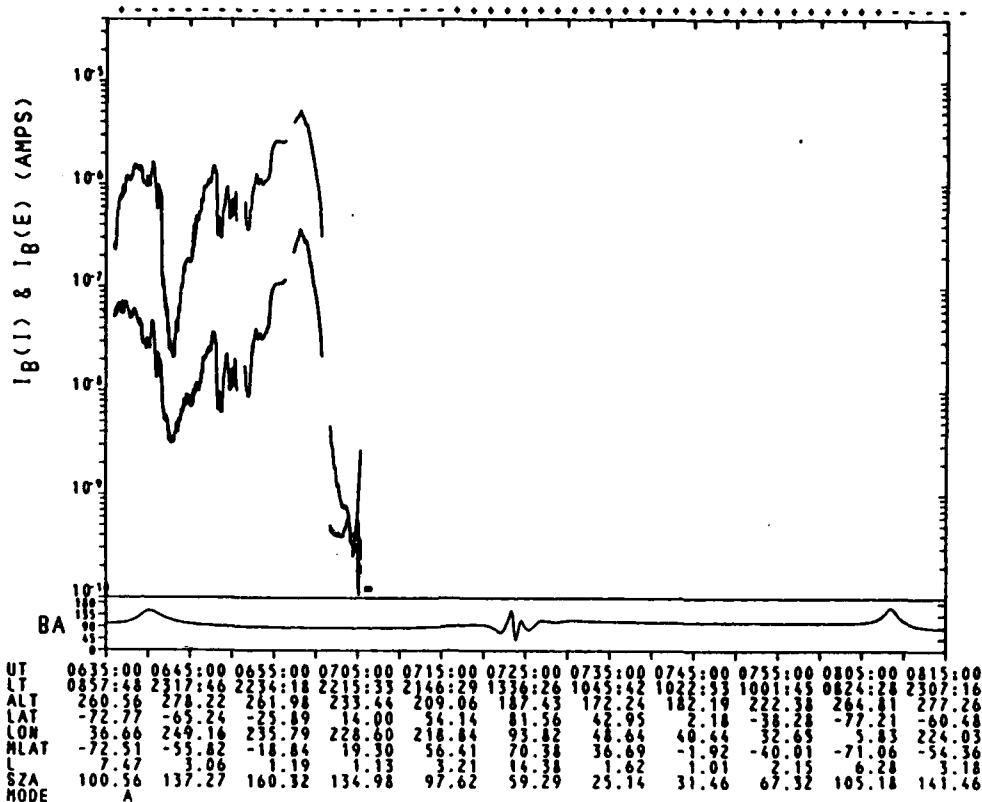
07/02/78

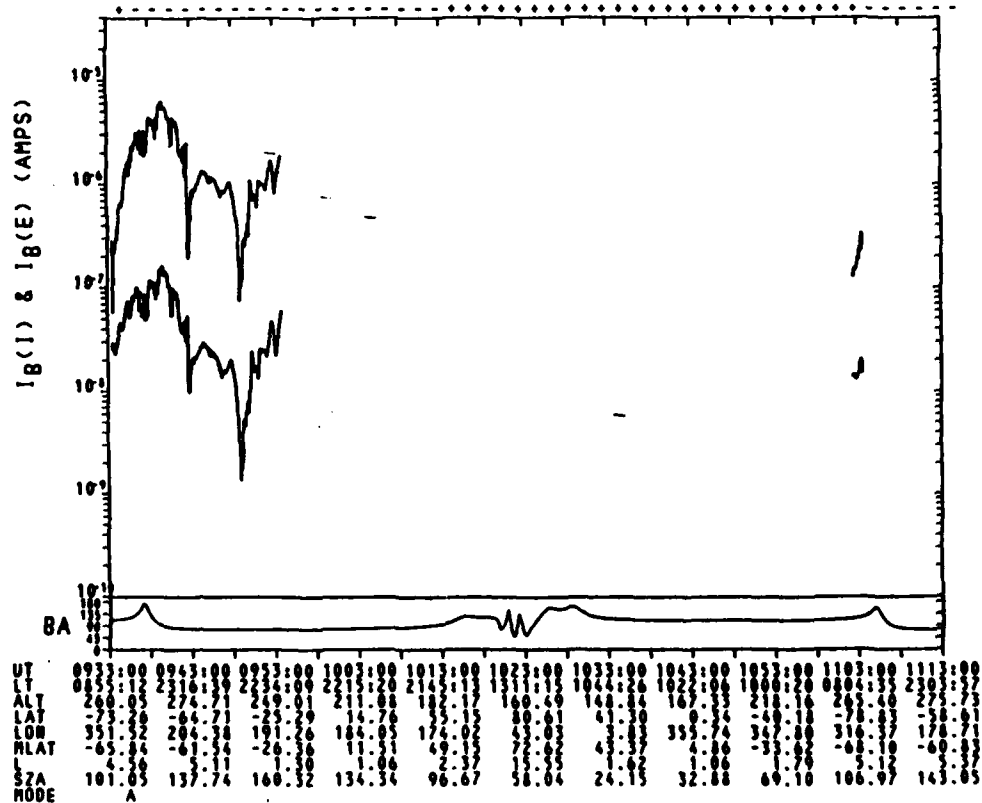
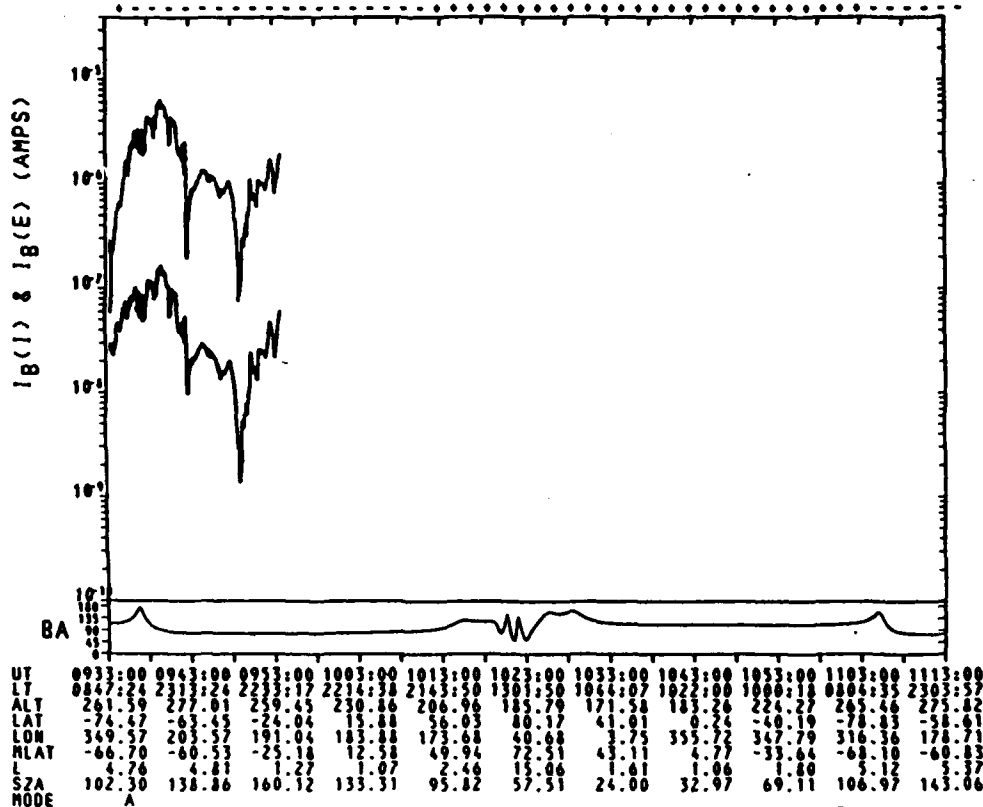
REV 1744

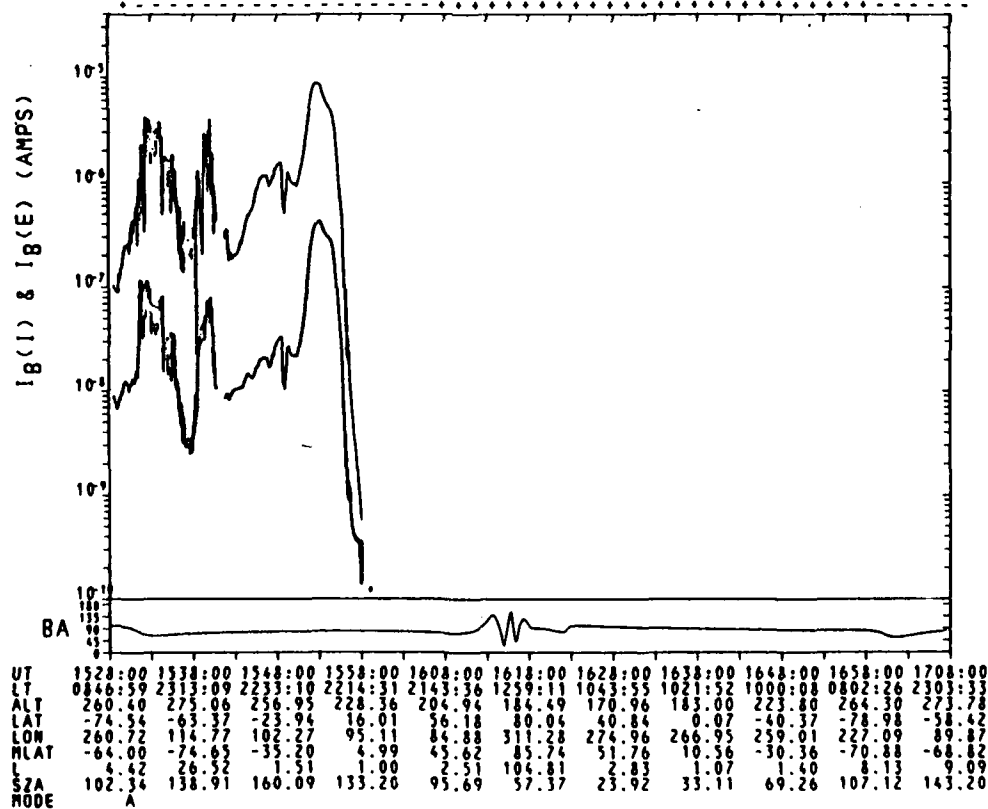
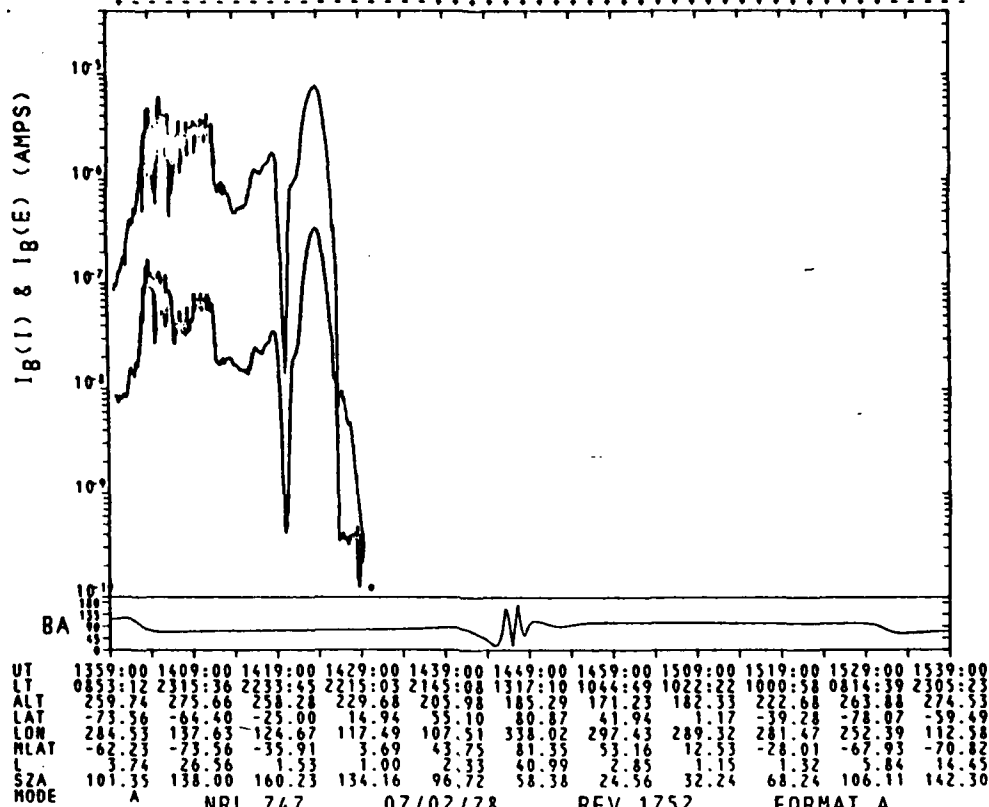
FORMAT A

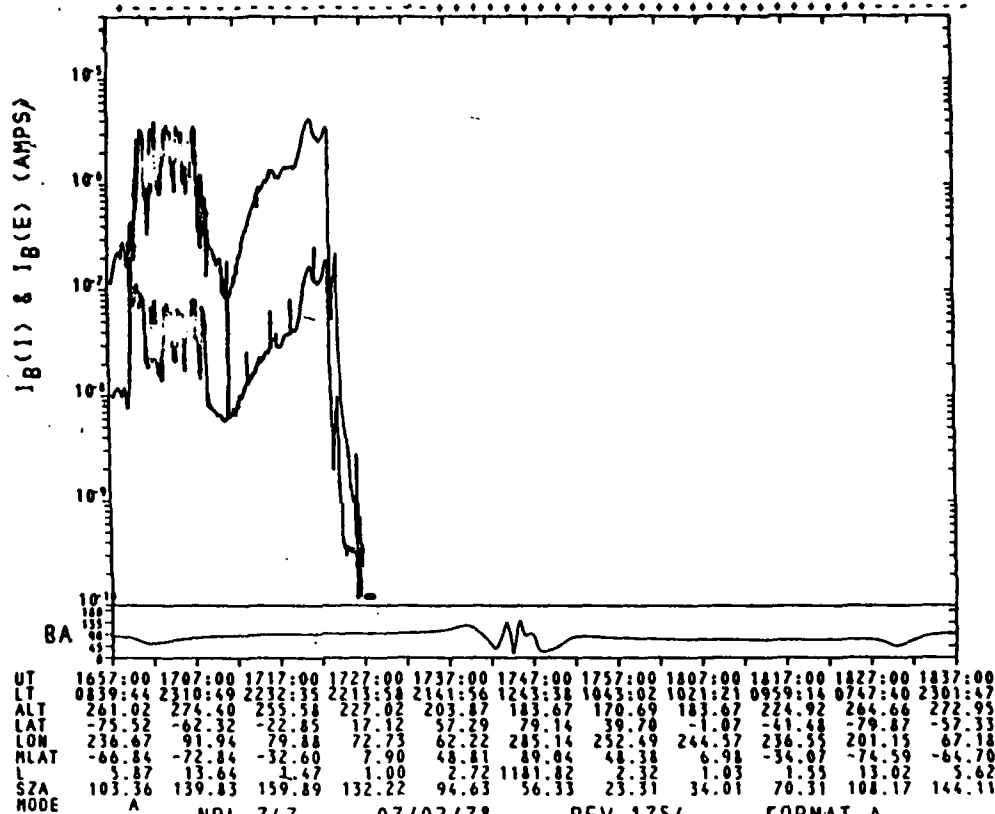
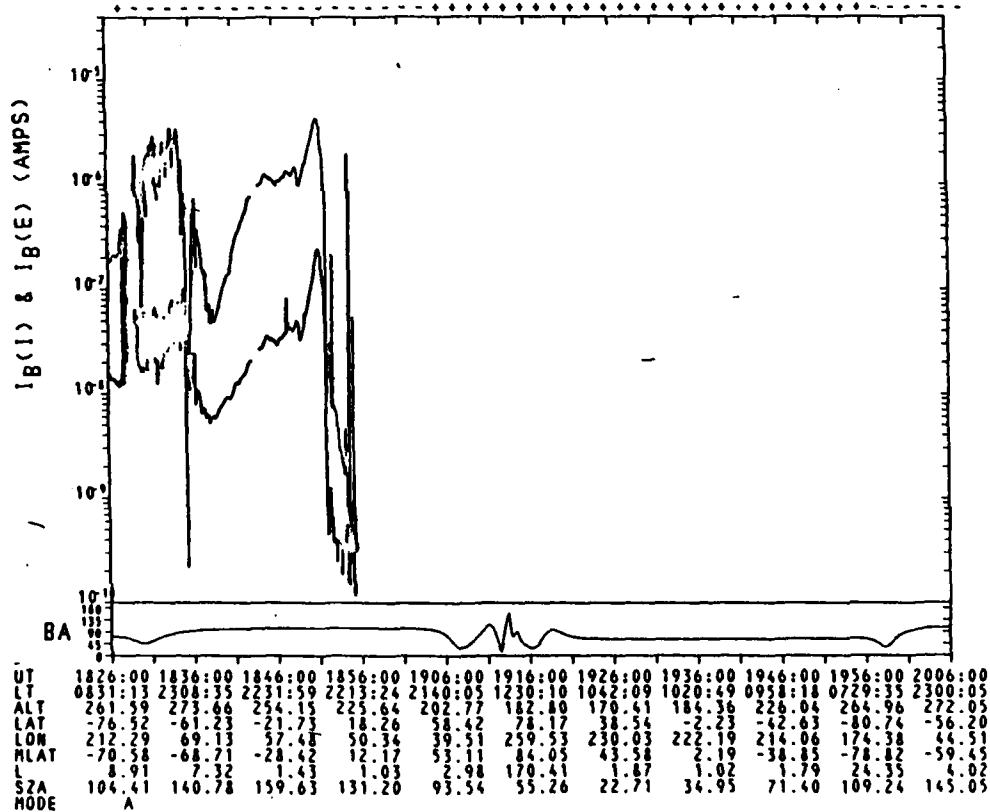


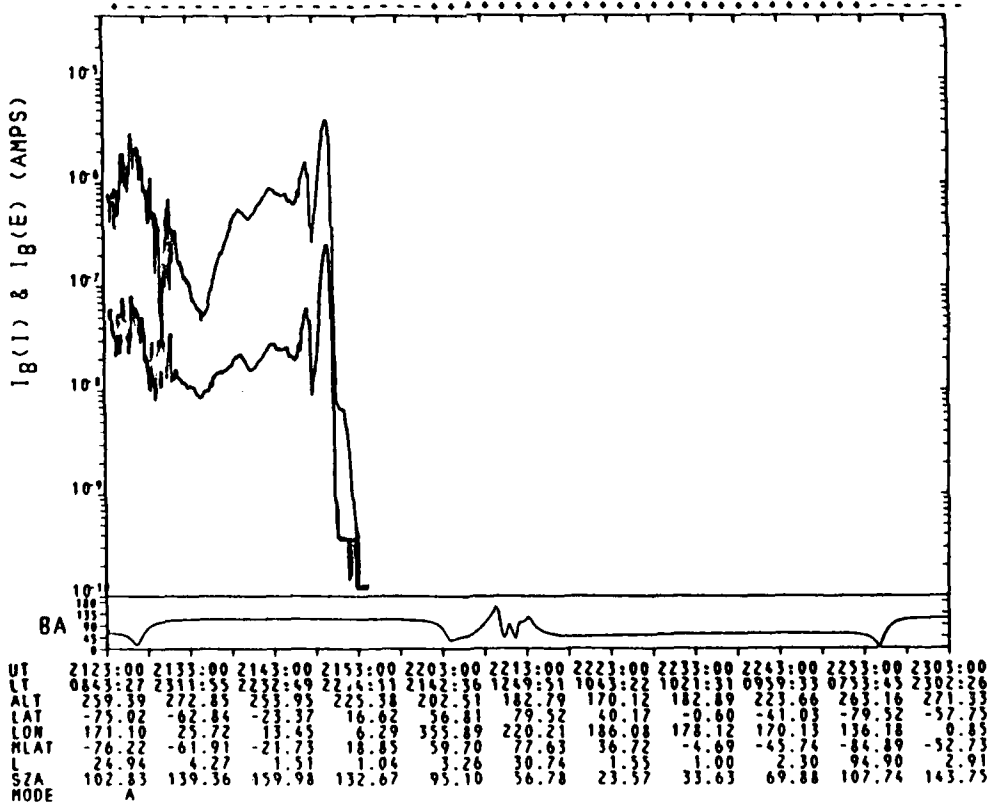
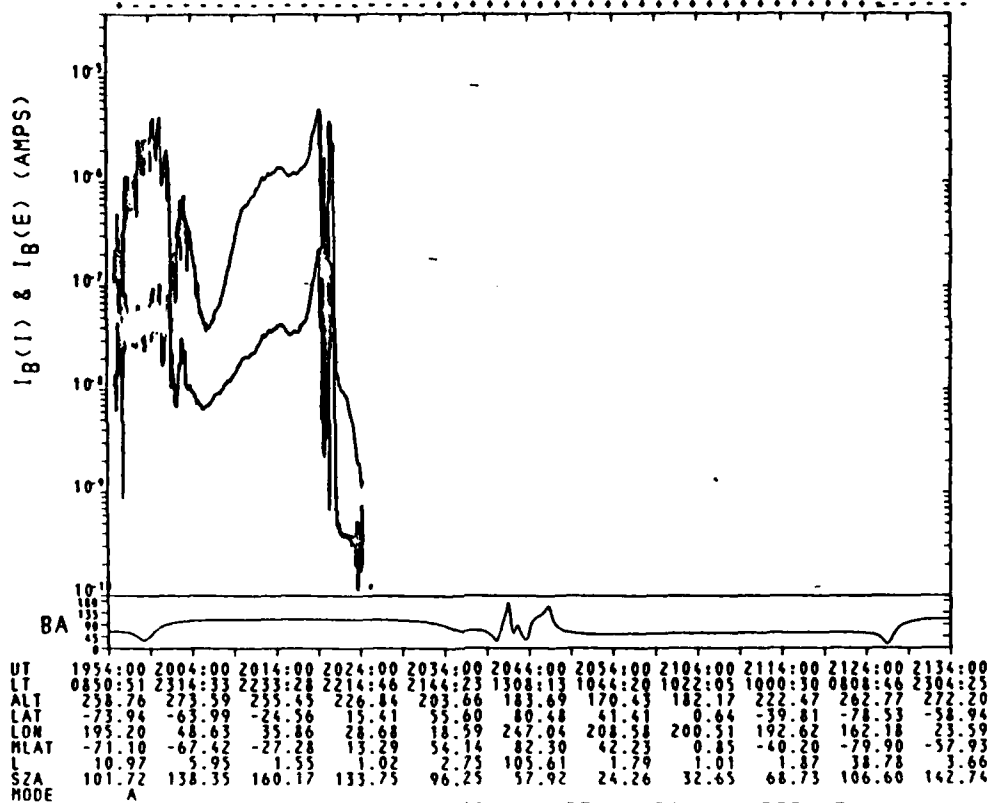








$I_B(I) \text{ \& } I_B(E) \text{ (AMPS)}$ 

 $I_B(I) \text{ \& } I_B(E) \text{ (AMPS)}$ 




NRL 747

07/02/78

REV 1757

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

UT	2232:00	2302:00	2312:00	2322:00	2332:00	2342:00	2352:00	0002:00	0012:00	0022:00	0032:00
LT	0834:40	2309:25	2332:10	2213:33	2140:59	1234:12	1042:24	1020:57	0958:33	0735:57	2300:31
ALT	260.02	272.07	252.43	223.93	201.38	181.92	169.85	183.76	228.47	271.28	278.81
LAT	-76.12	-61.65	-22.14	17.86	58.05	78.48	38.90	-1.87	-42.27	-80.46	-56.60
LONG	146.66	-2.85	351.04	343.88	333.16	194.05	163.60	155.73	147.63	109.49	338.13
MLAT	-81.64	-56.74	-16.44	24.18	65.11	73.14	31.74	-9.66	-50.70	-88.18	-48.33
L	104.83	3.30	1.38	1.09	4.36	15.61	1.39	1.02	2.86	60.66	2.34
SZA	103.98	140.40	159.73	131.56	93.90	55.61	22.91	34.65	71.04	108.87	144.69
MODE	A										

NRL 747

07/03/78

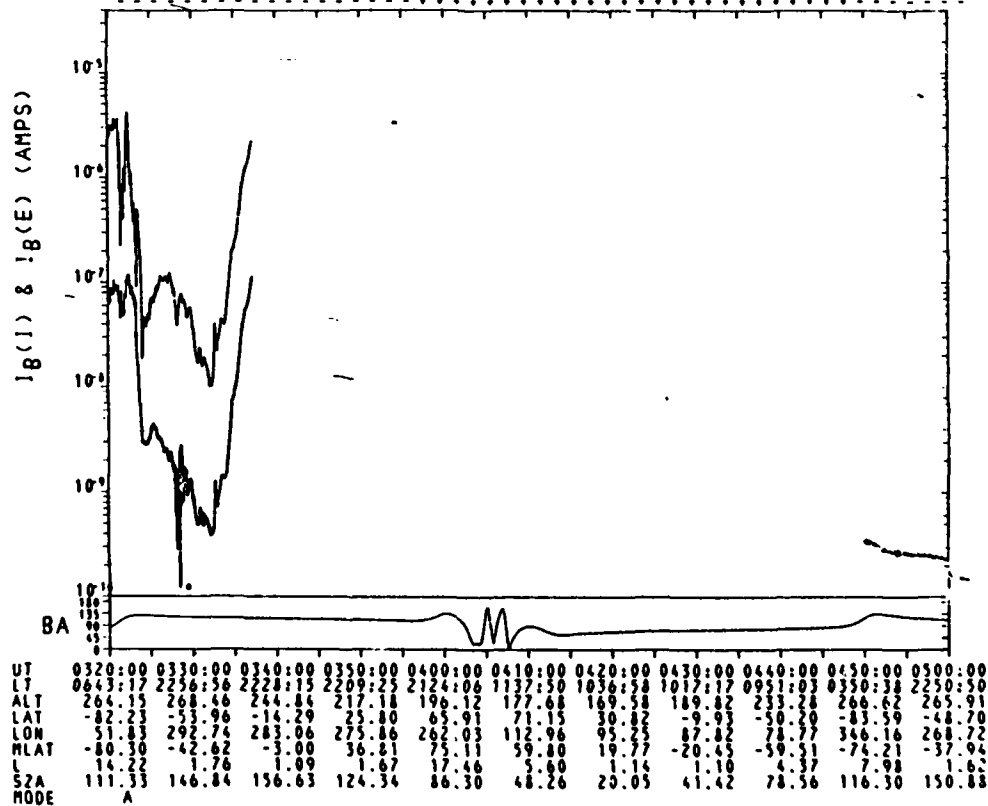
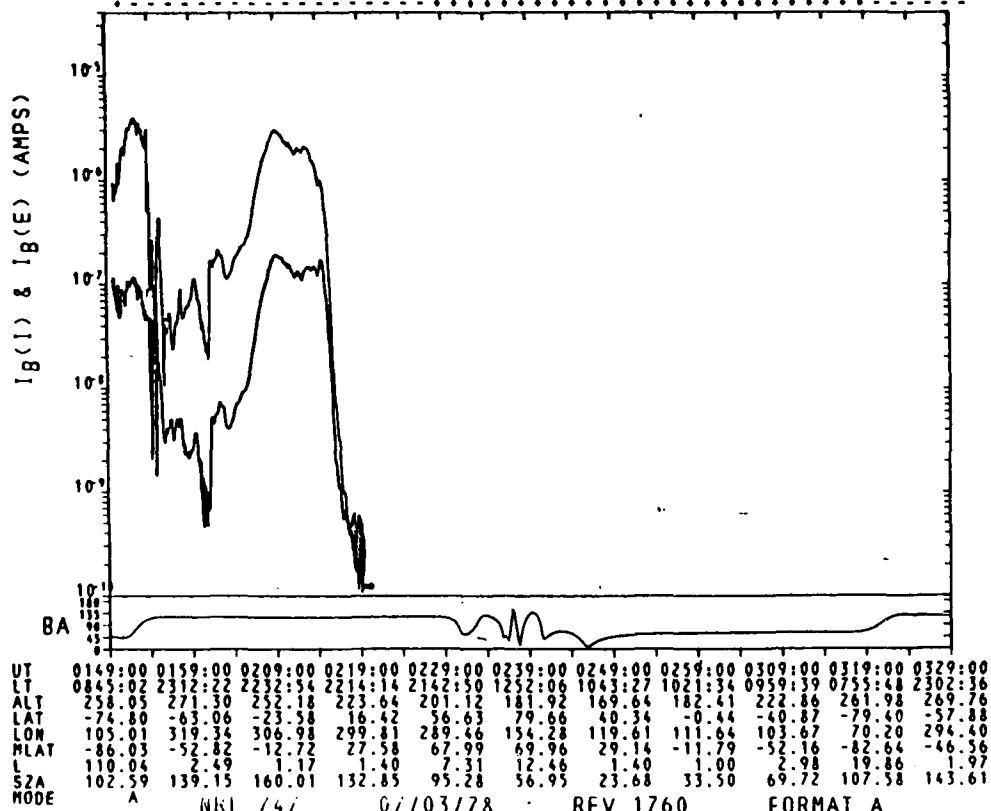
REV 1758

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

UT	0021:00	0031:00	0041:00	0051:00	0101:00	0111:00	0121:00	0131:00	0141:00	0151:00	0201:00
LT	0824:10	2307:02	2221:31	2221:30	2138:20	1228:51	1051:26	1020:22	0937:27	0712:07	2258:42
ALT	269.64	271.26	240.90	222.46	200.26	181.06	169.64	184.22	226.01	263.93	269.49
LAT	-77.22	-60.42	-20.90	16.16	59.37	77.36	37.60	-1.11	-42.56	-81.40	-55.29
LONG	121.79	340.00	328.08	321.46	310.37	168.46	161.11	151.11	144.39	101.28	315.23
MLAT	-87.05	-52.00	-11.93	2.10	67.70	69.13	27.74	-1.31	-44.39	-84.68	-44.81
L	289.41	2.00	1.10	1.00	4.70	10.51	1.31	1.00	2.50	25.38	1.96
SZA	105.15	141.46	159.39	130.41	92.68	54.42	22.28	35.72	72.27	110.11	145.80
MODE	A										

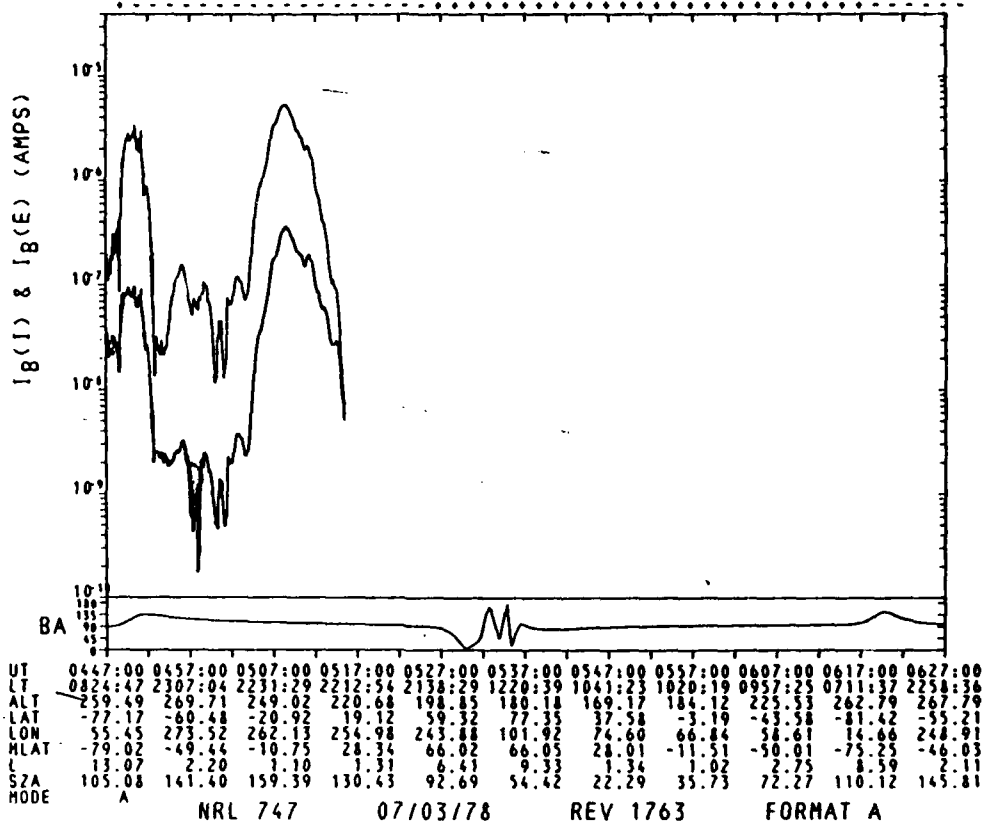


NRL 747

07/03/78

REV 1761

FORMAT A

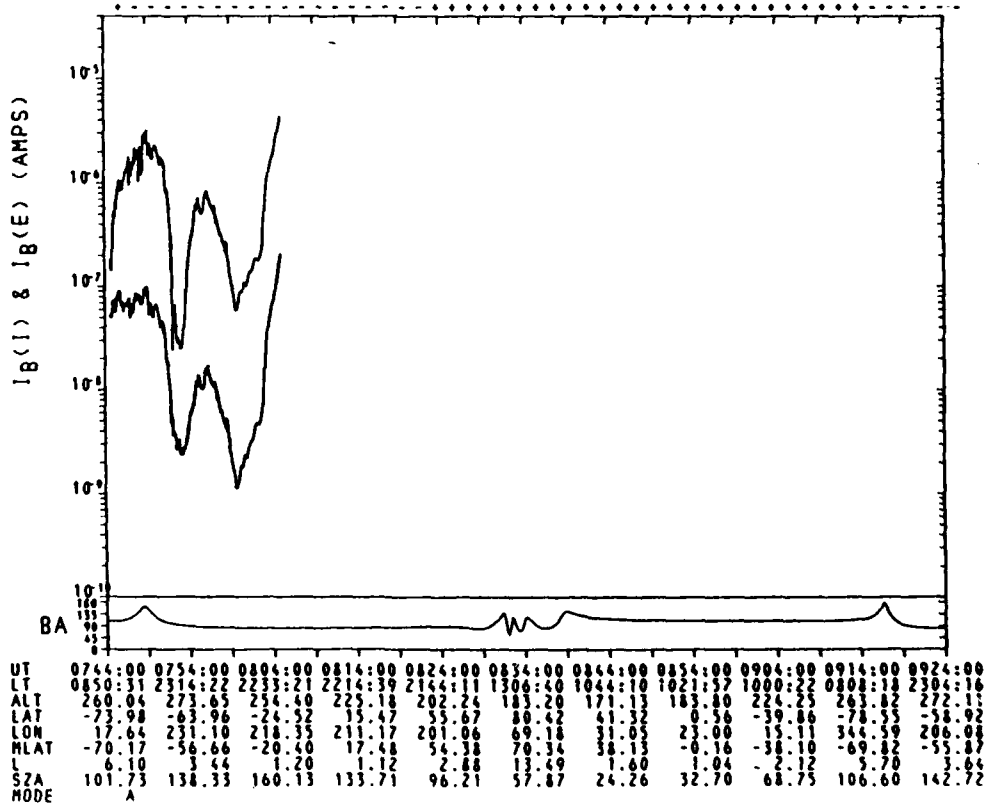


NRL 747

07/03/78

REV 1763

FORMAT A



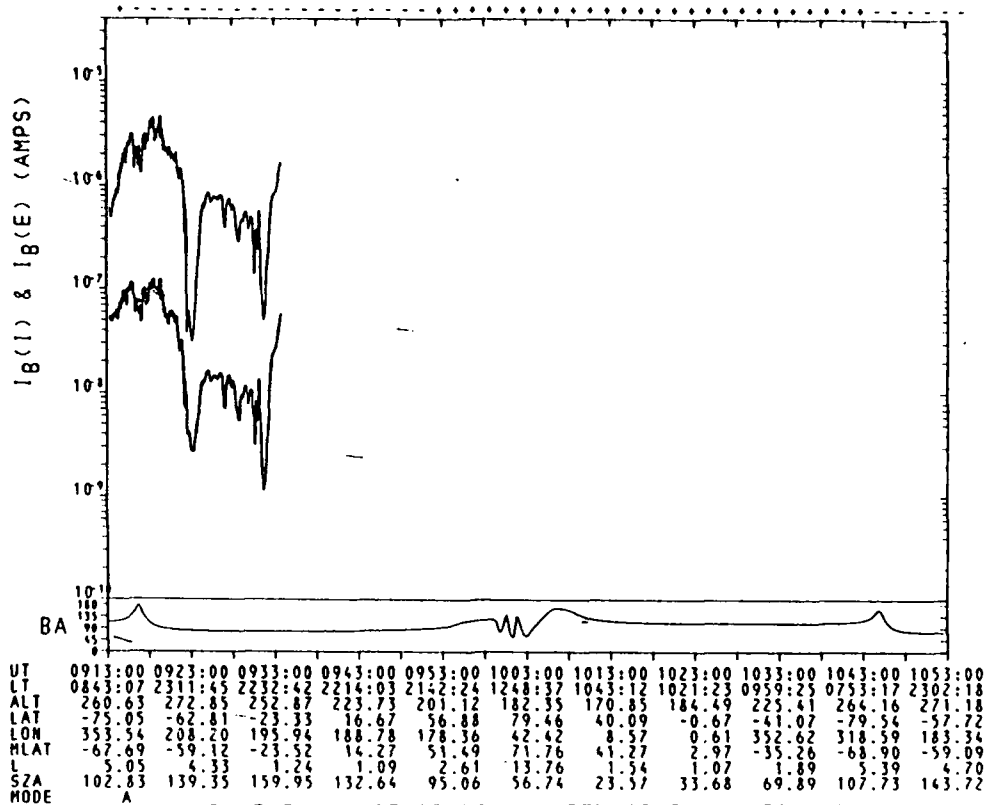


NRL 747

07/03/78

REV 1764

FORMAT A

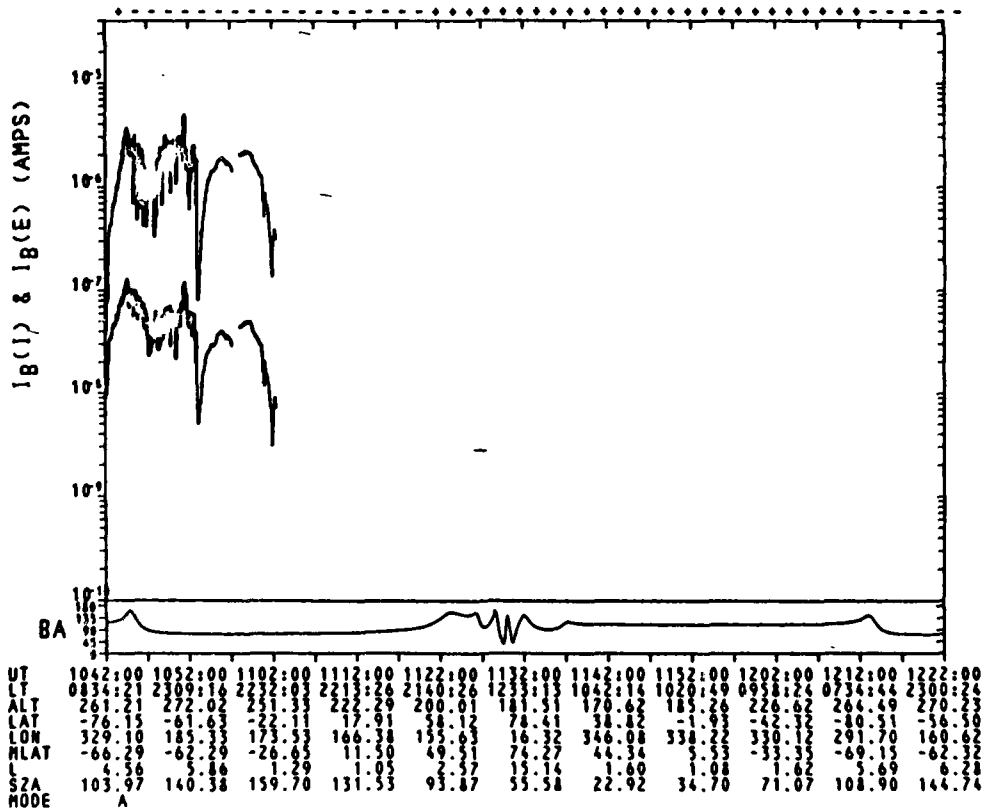


NRL 747

07/03/78

REV 1765

FORMAT A

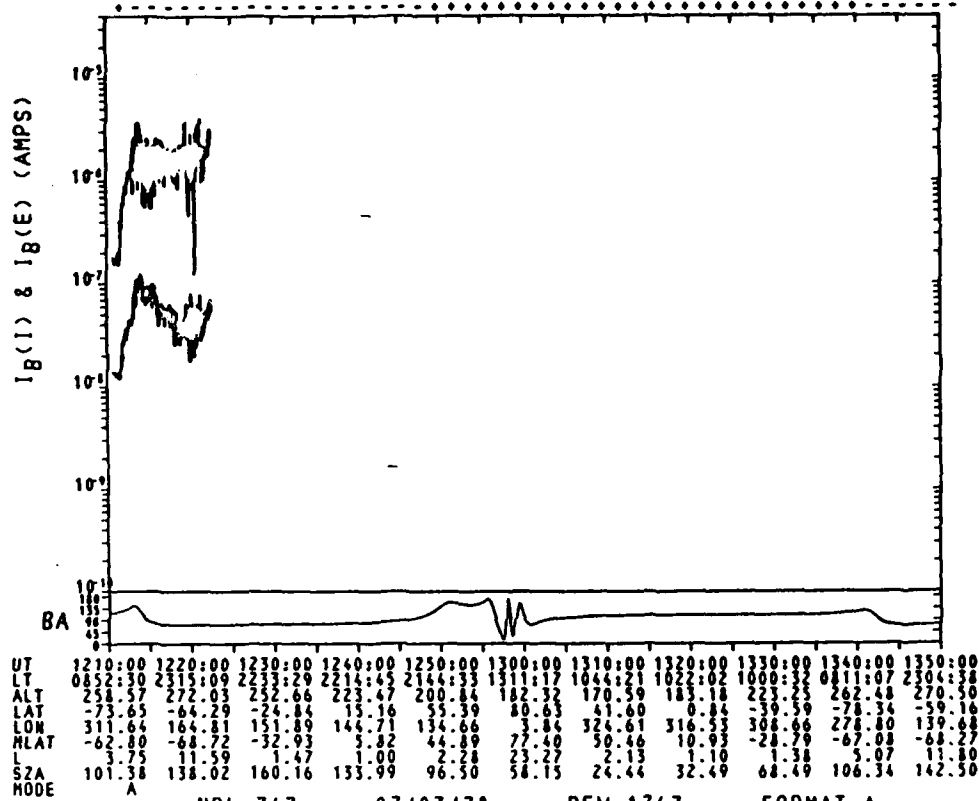


NRL 747

07/03/78

REV 1766

FORMAT A

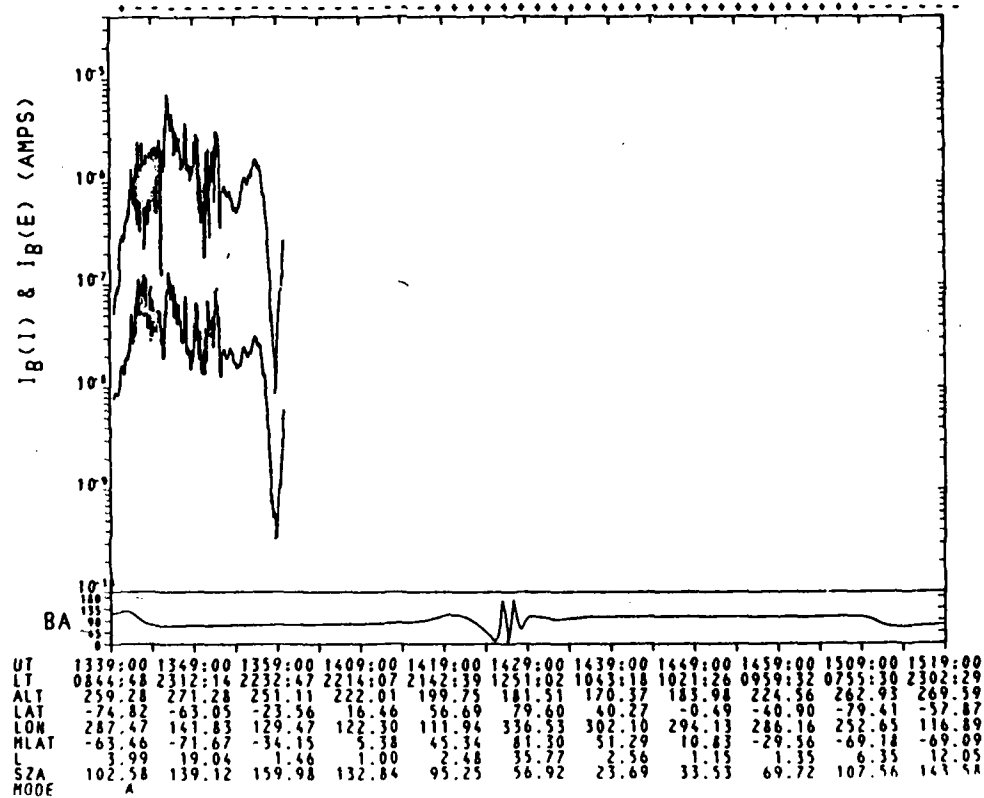


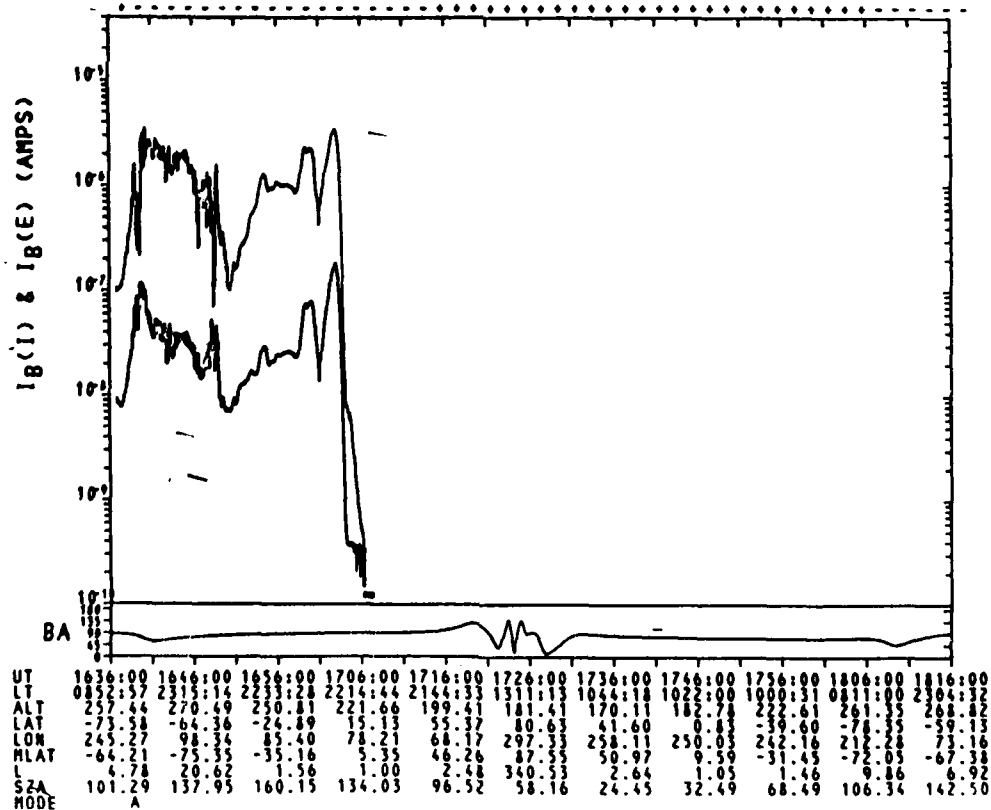
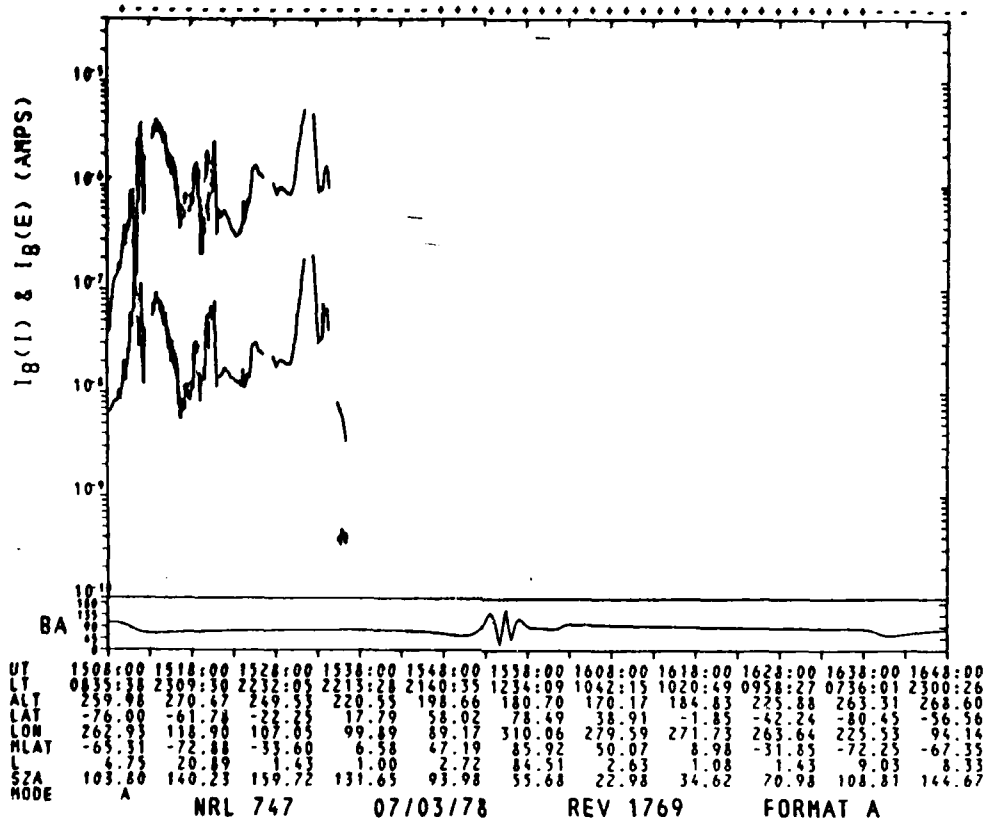
NRL 747

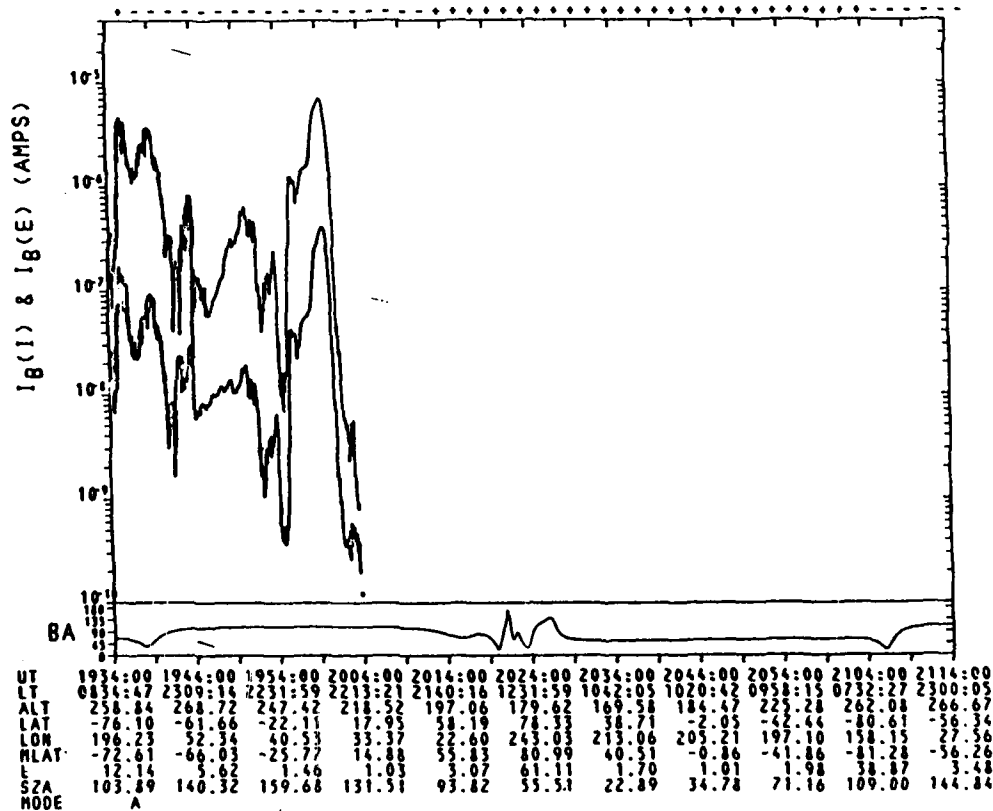
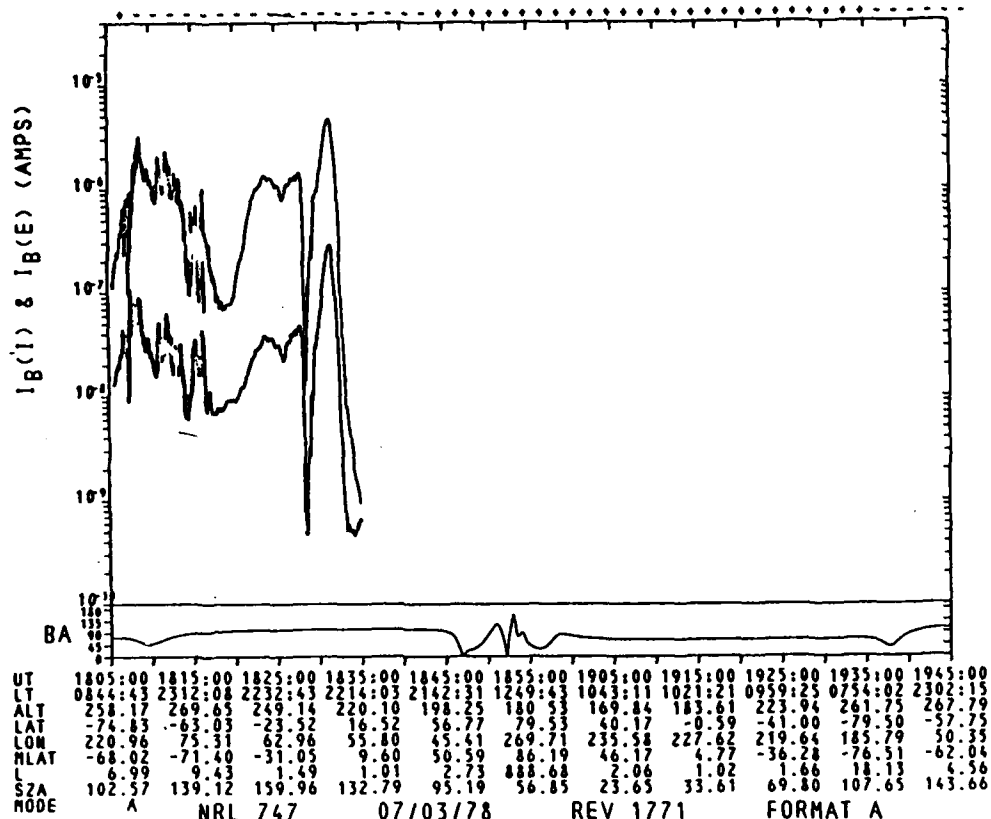
07/03/78

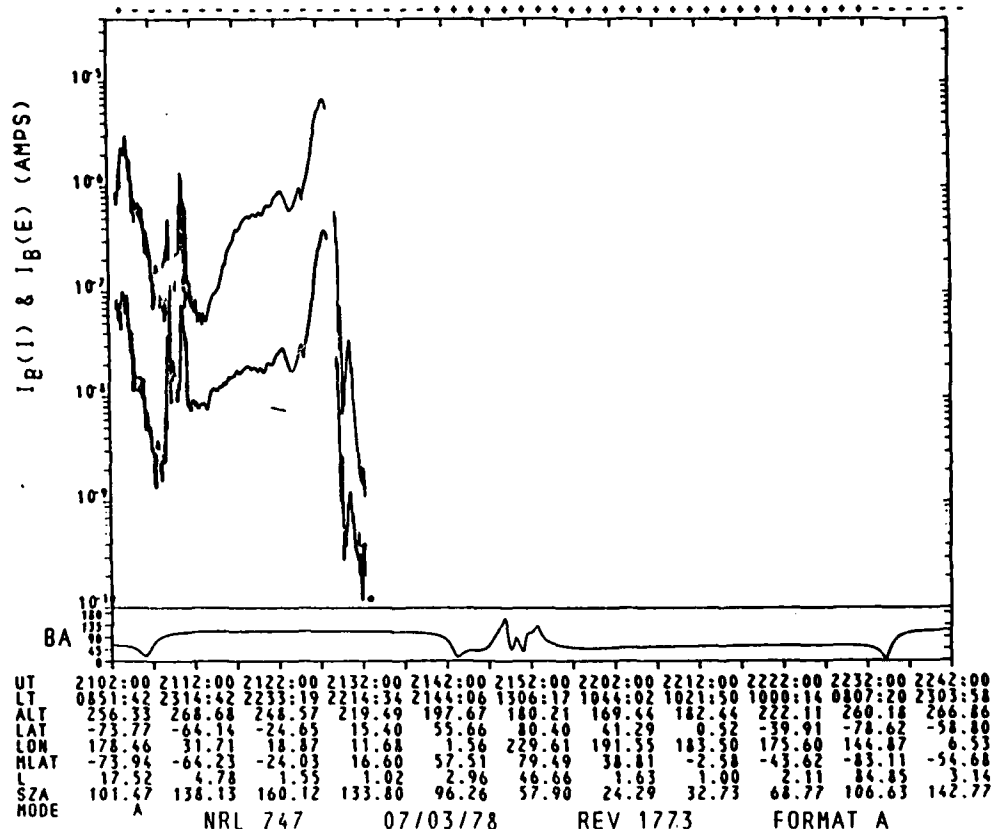
REV 1767

FORMAT A







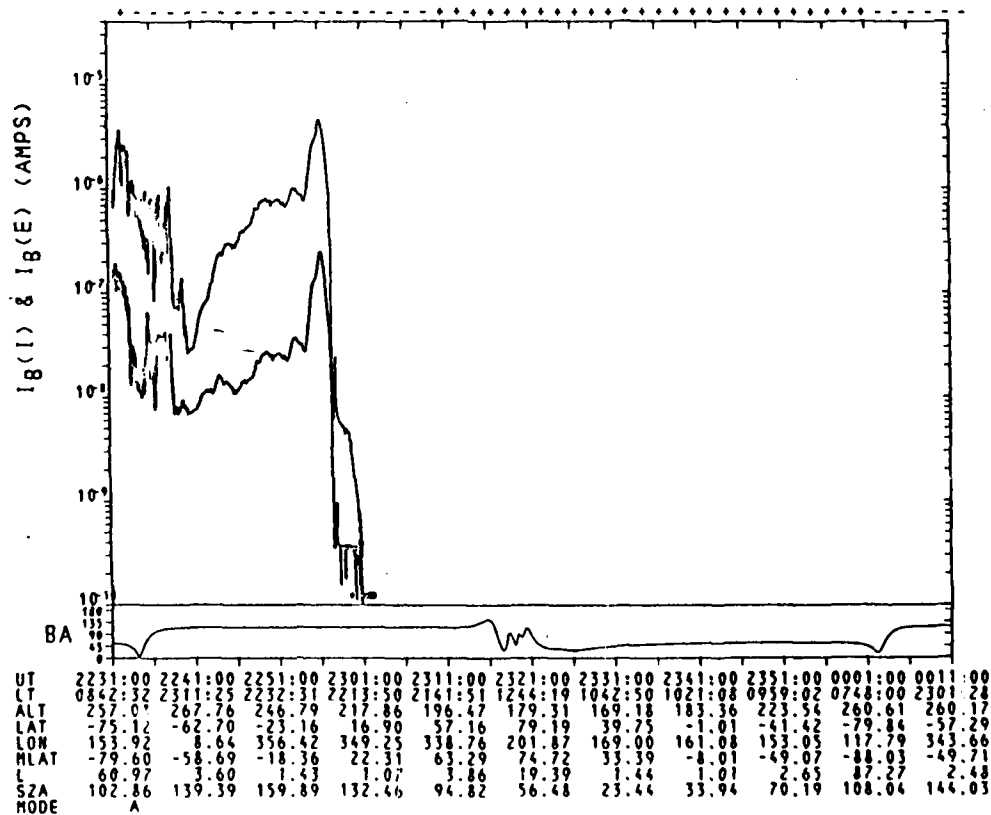


NRL 747

07/03/78

REV 1773

FORMAT A

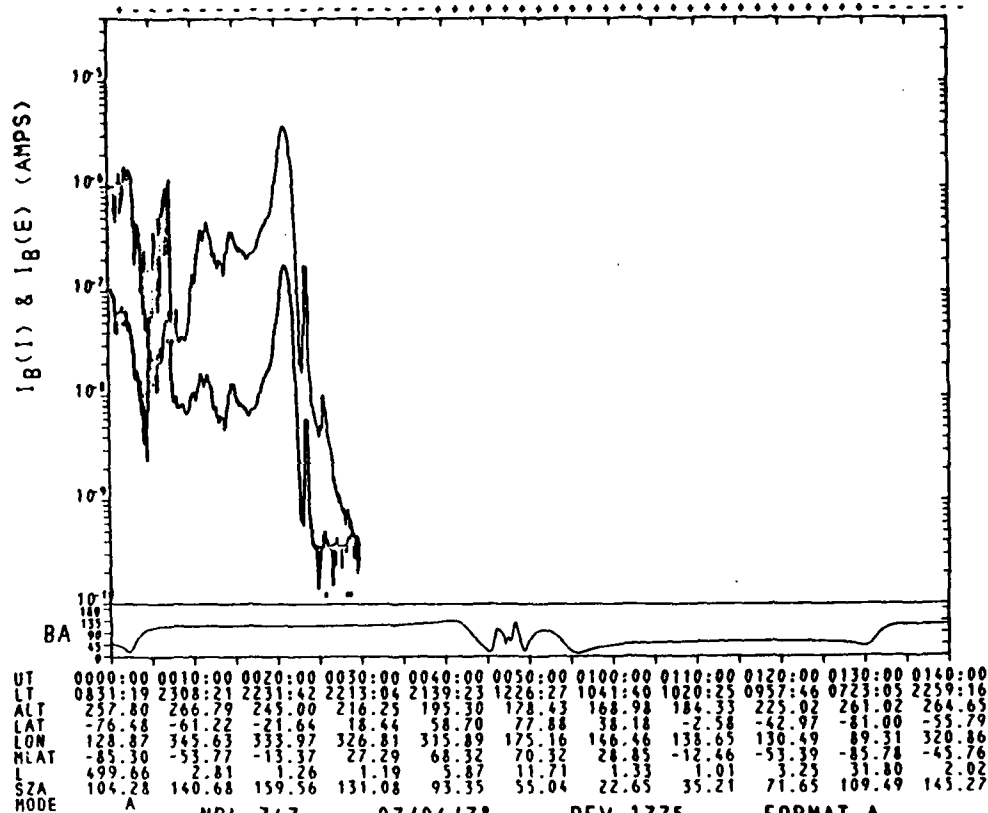


NRL 747

07/04/78

REV 1774

FORMAT A

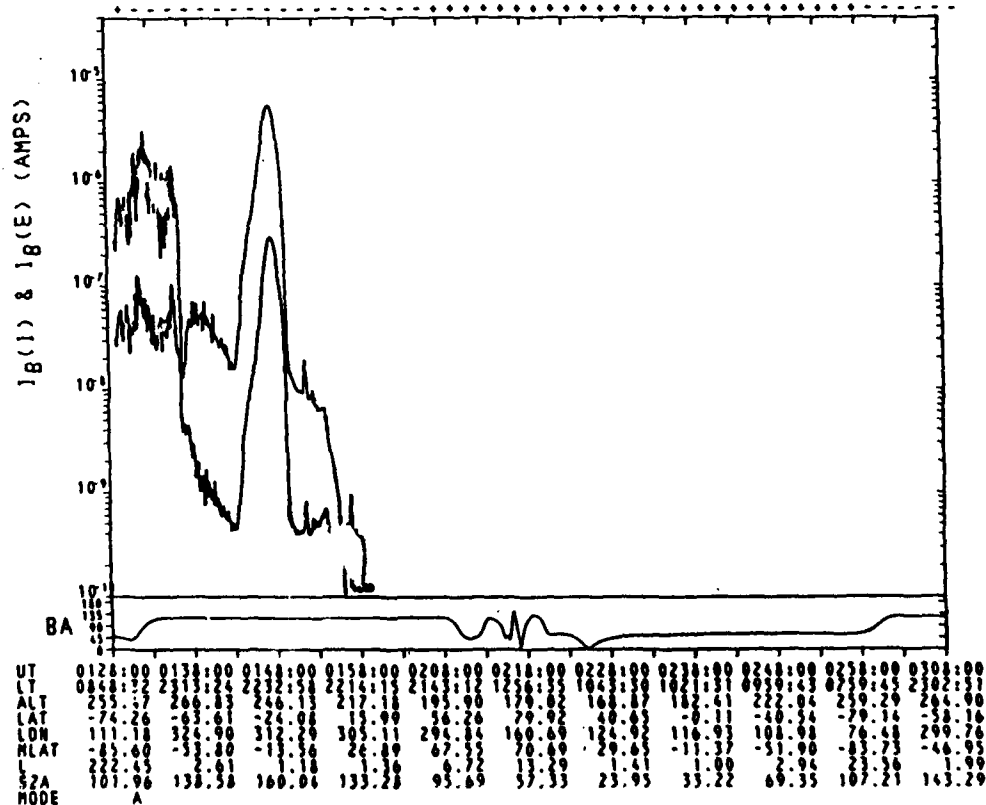


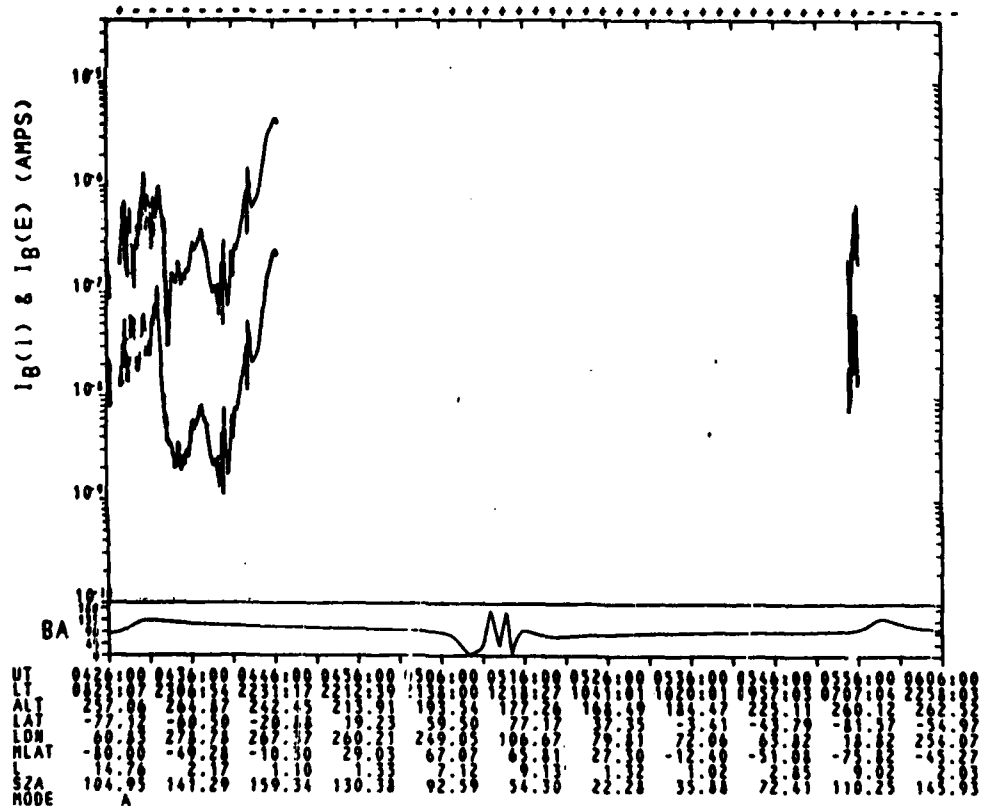
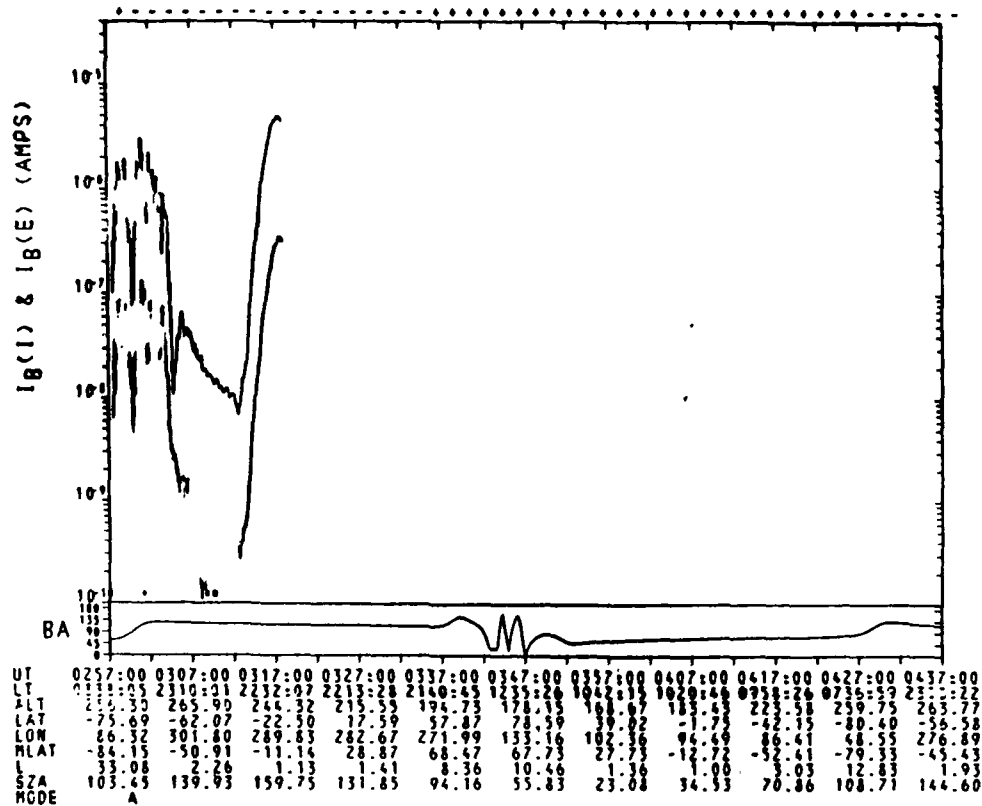
NRL 747

07/04/78

REV 1775

FORMAT A



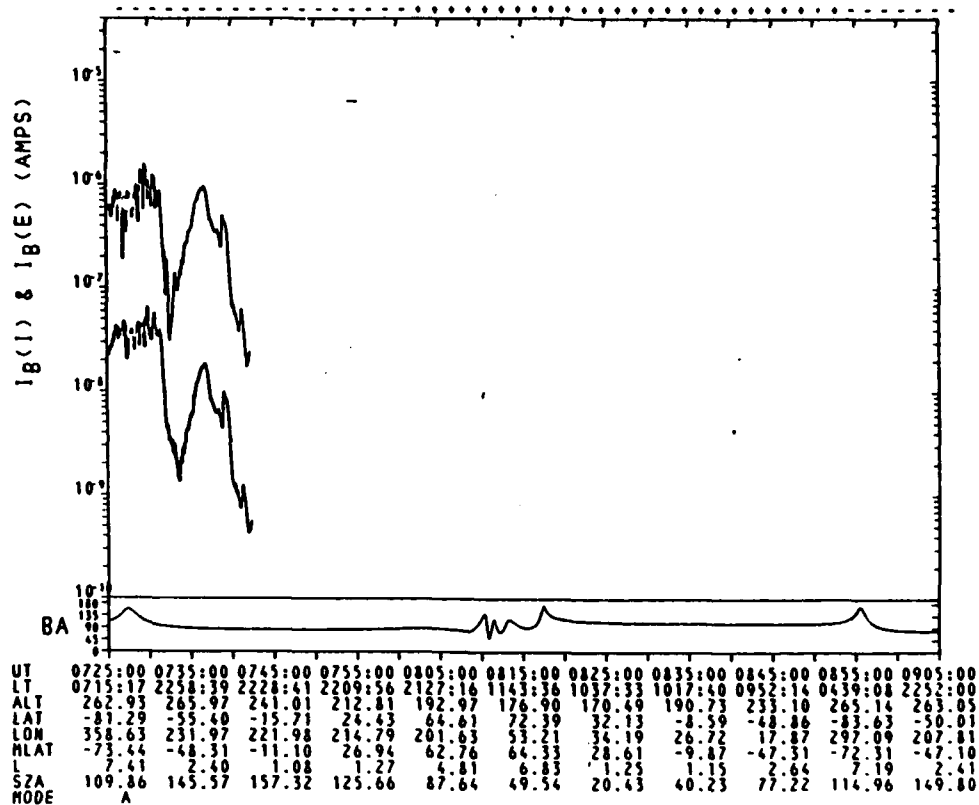


NRL 747

07/04/78

REV 1779

FORMAT A

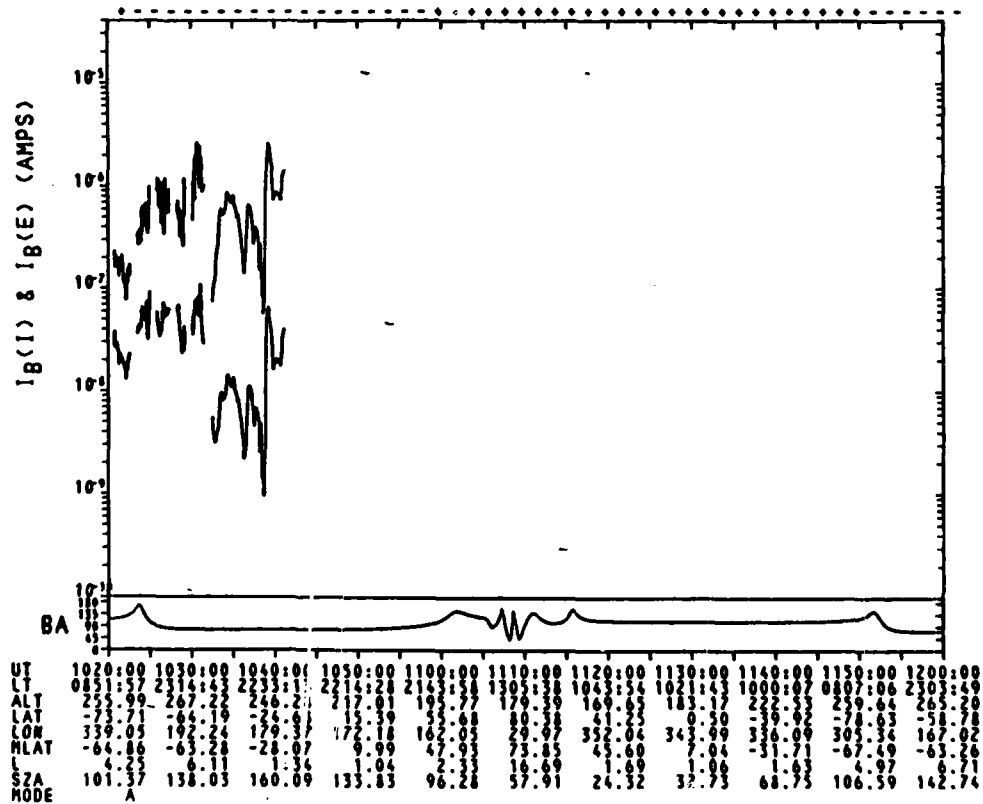


NRL 747

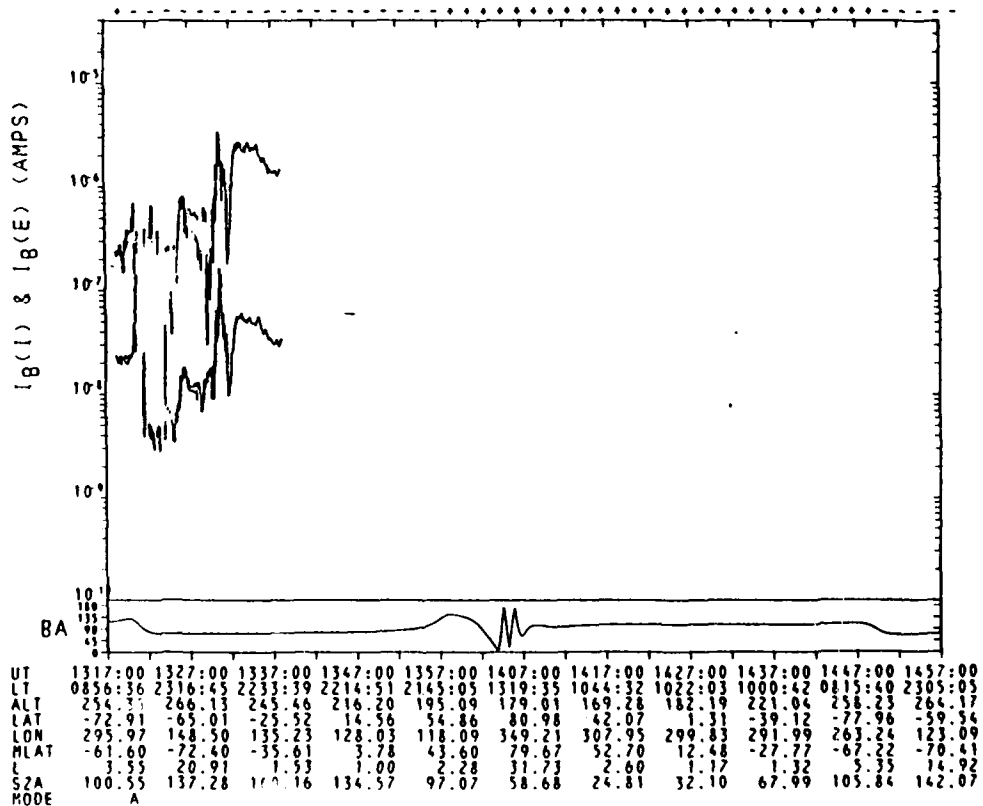
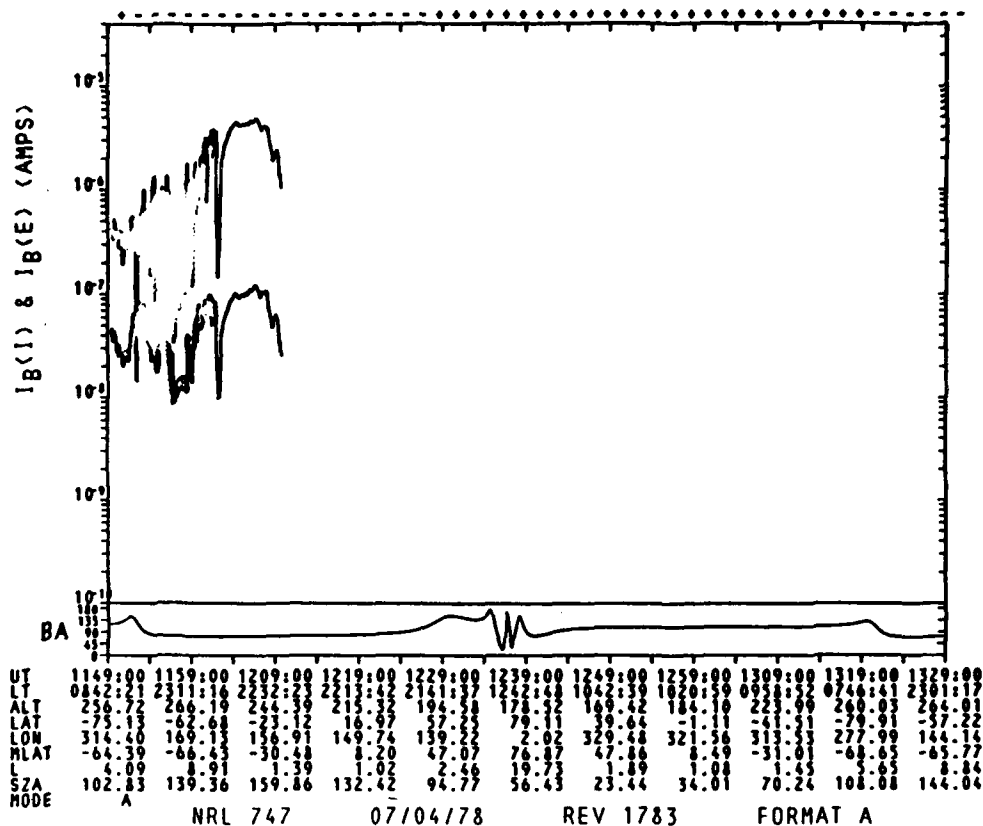
07/04/78

REV 1781

FORMAT A





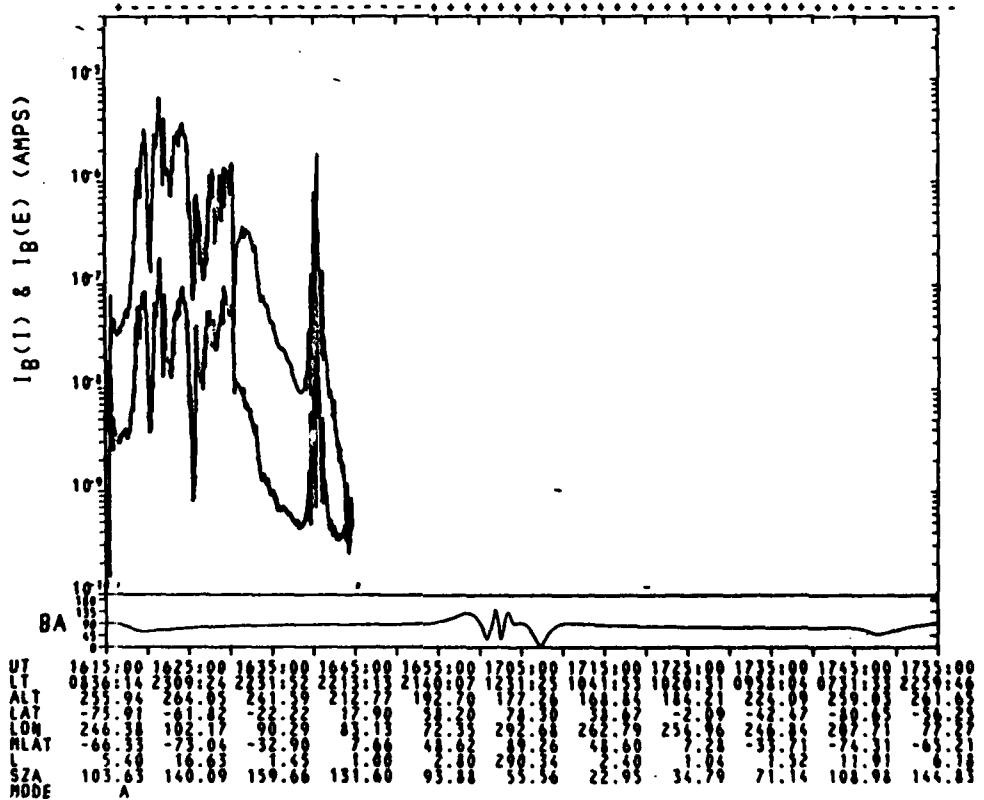
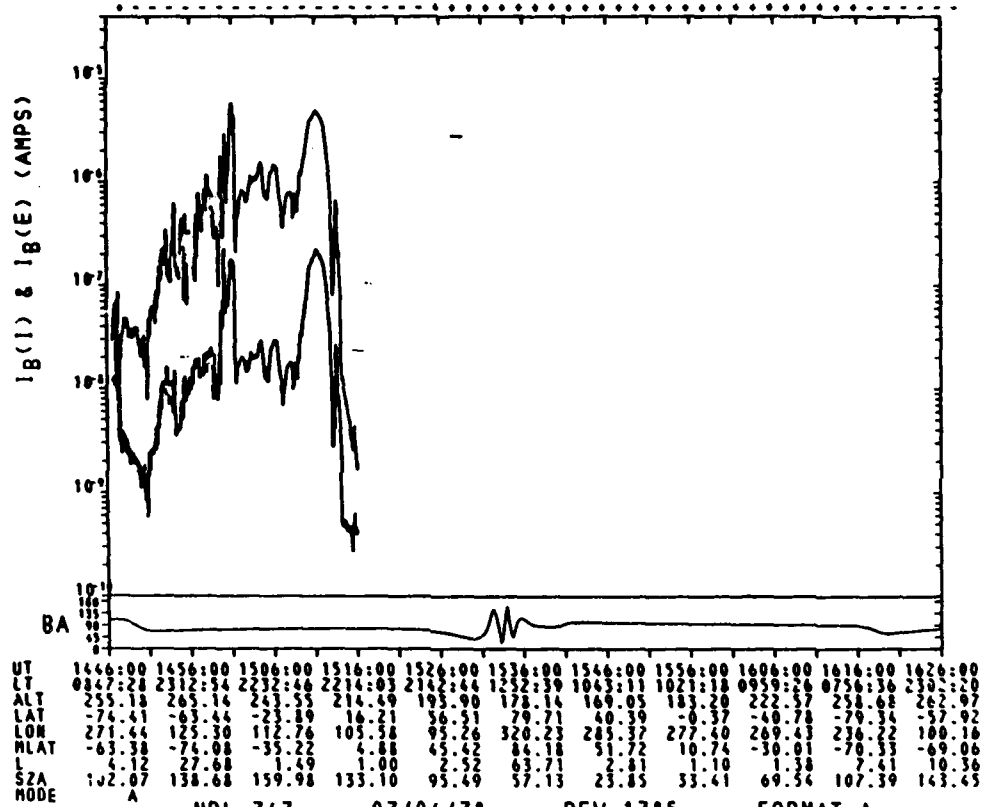


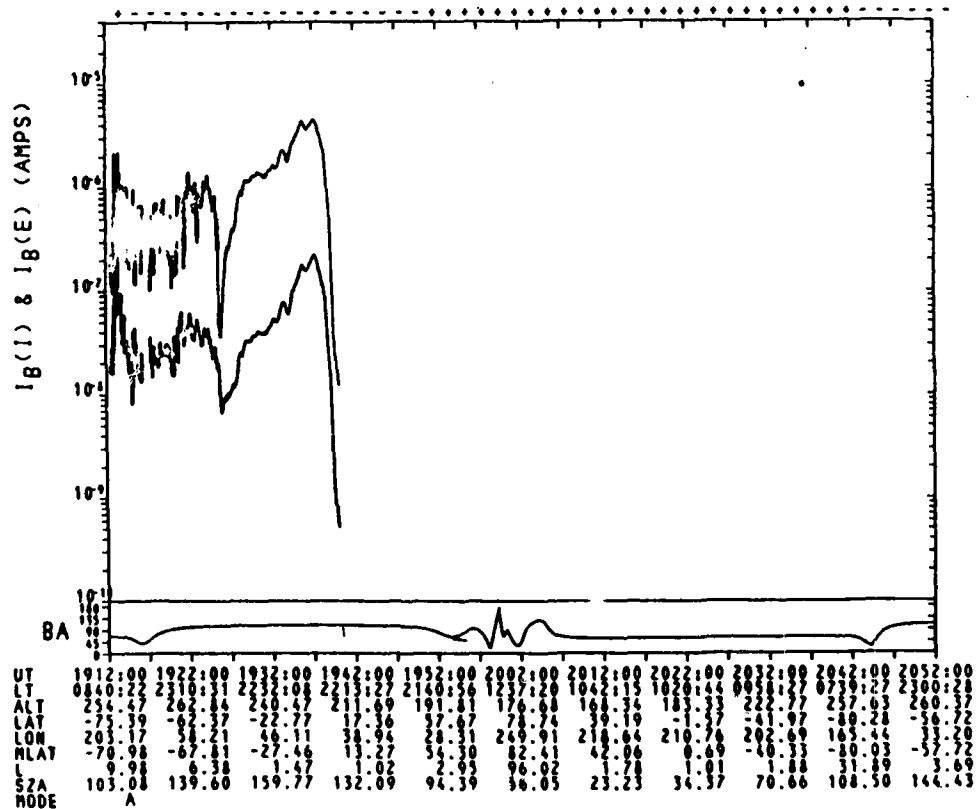
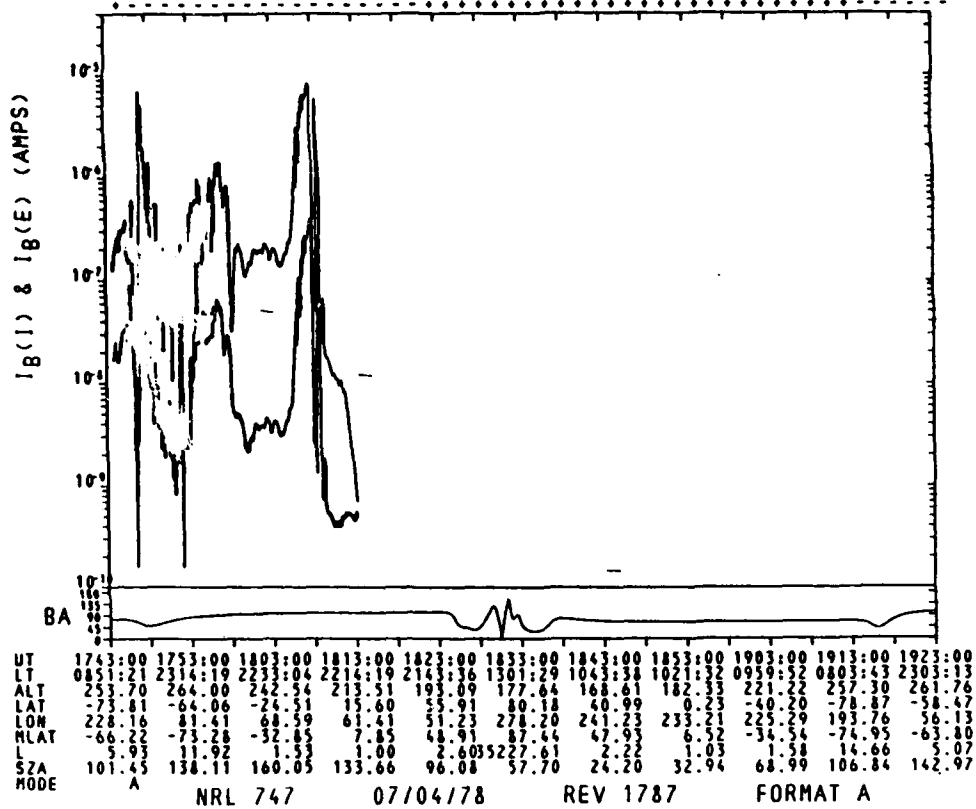
NRL 747

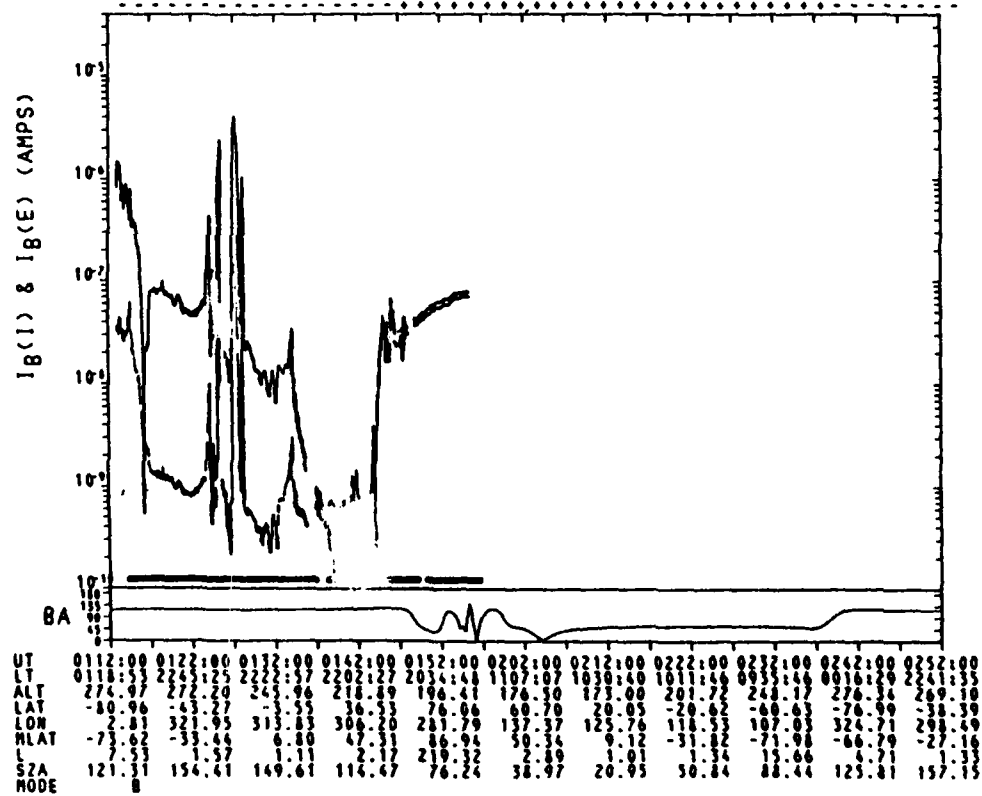
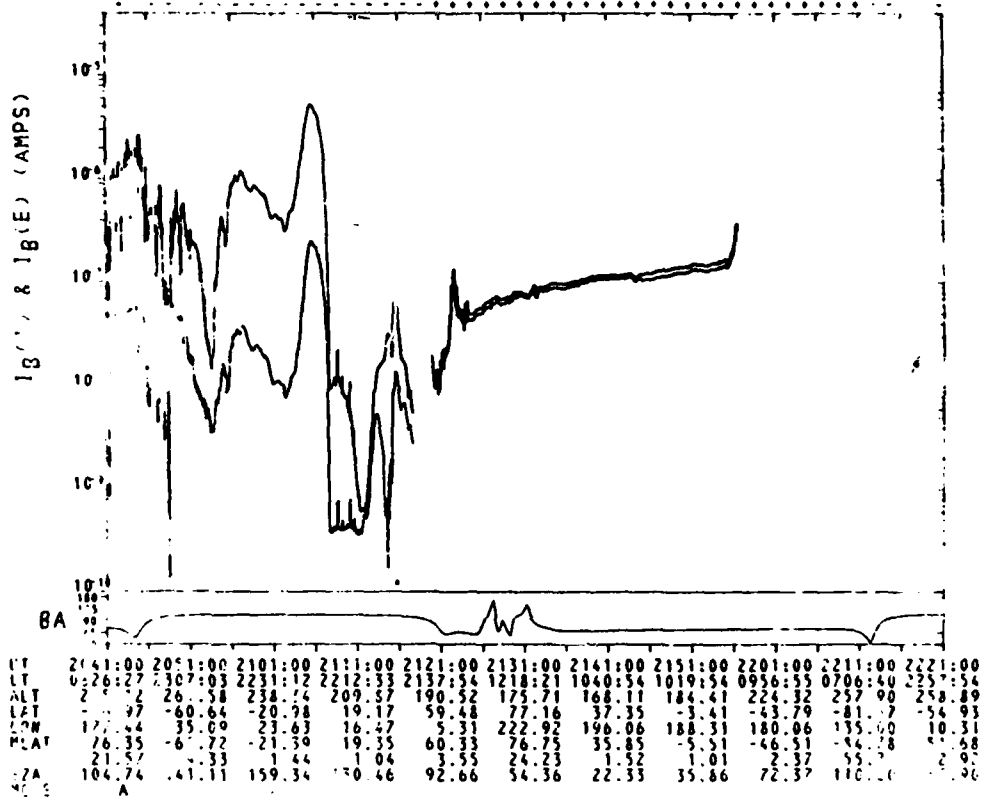
07/04/78

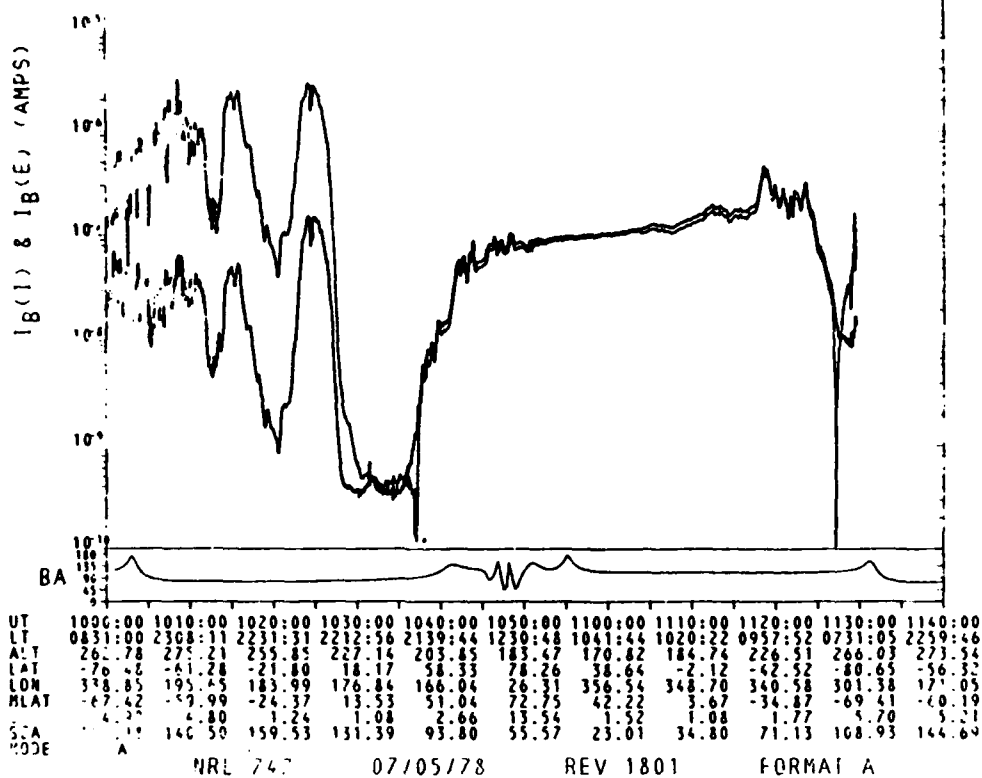
REV 1784

FORMAT A







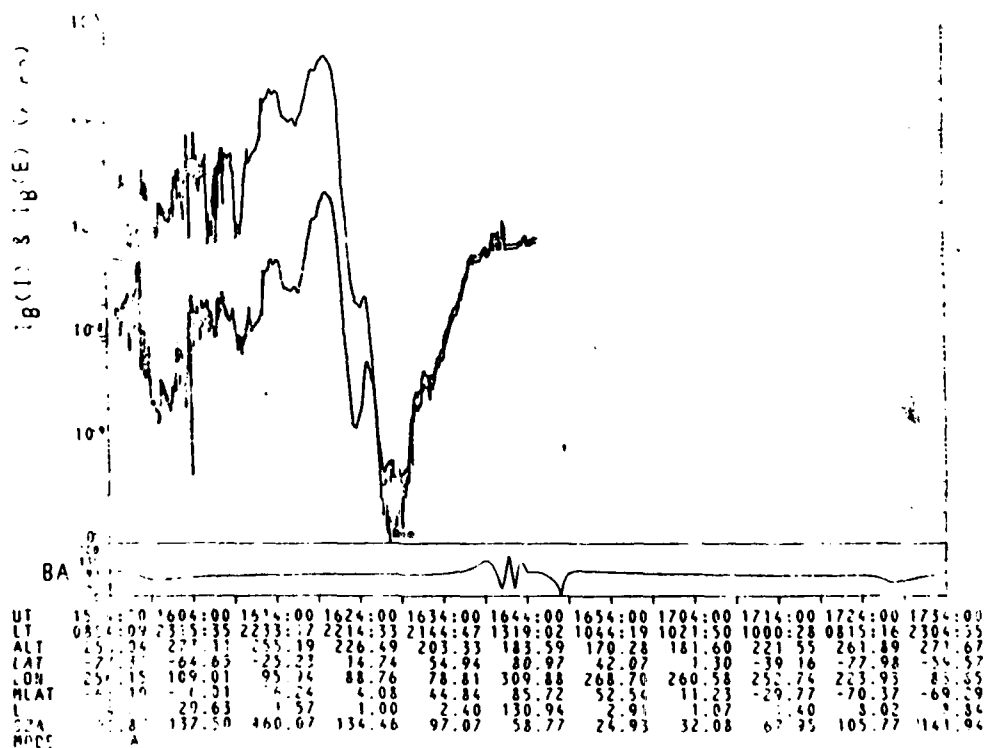


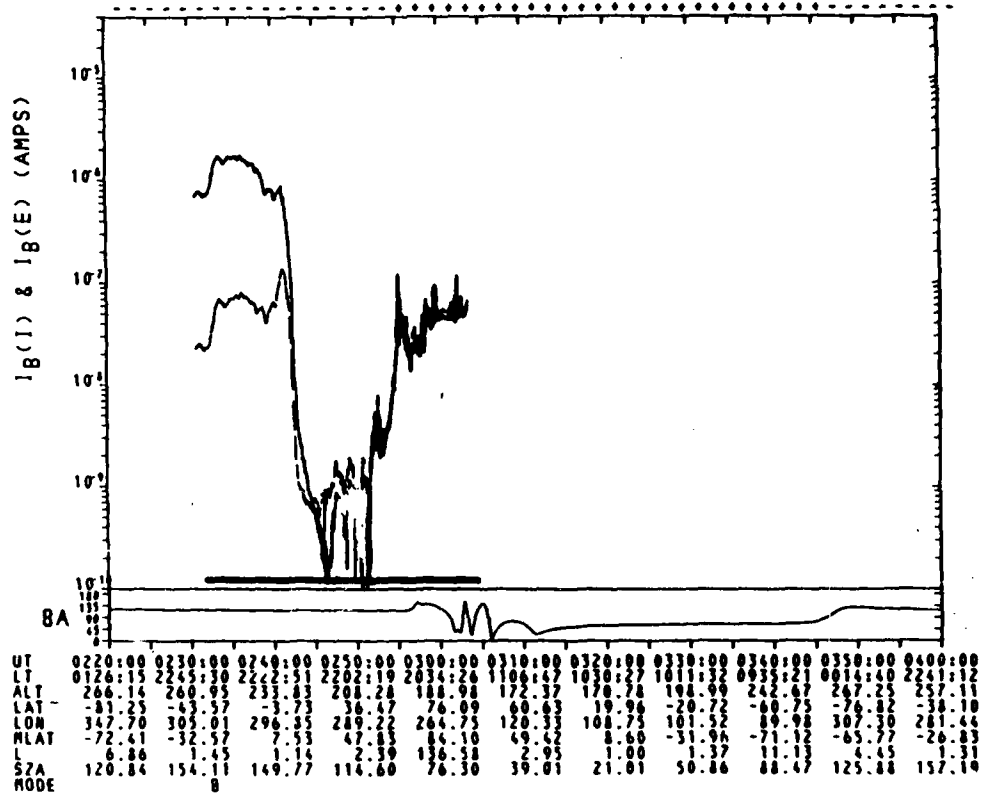
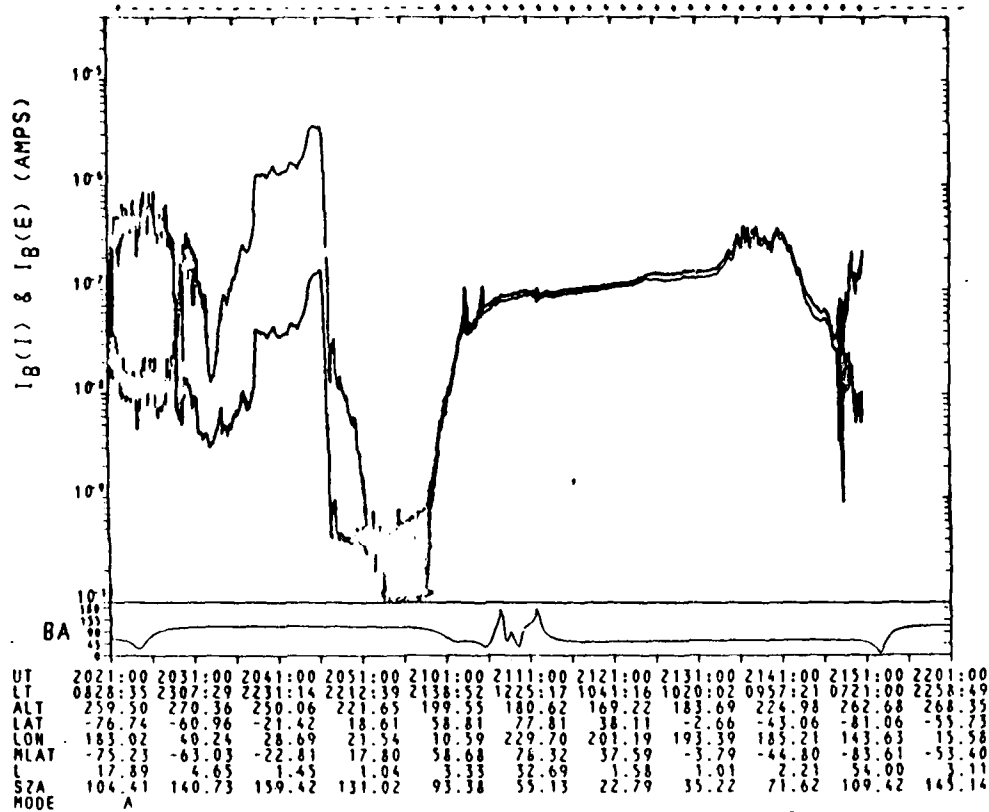
NRL 747

07/05/78

REV 1801

FORMAT A





AD-A117 269

NAVAL RESEARCH LAB WASHINGTON DC  
AN ATLAS OF IONOSPHERIC F-REGION STRUCTURES AS DETERMINED BY TH-ETC(U)  
JUL 82 E P SZUSZCZEWICZ, J C HOLMES  
NRL-NR-4862

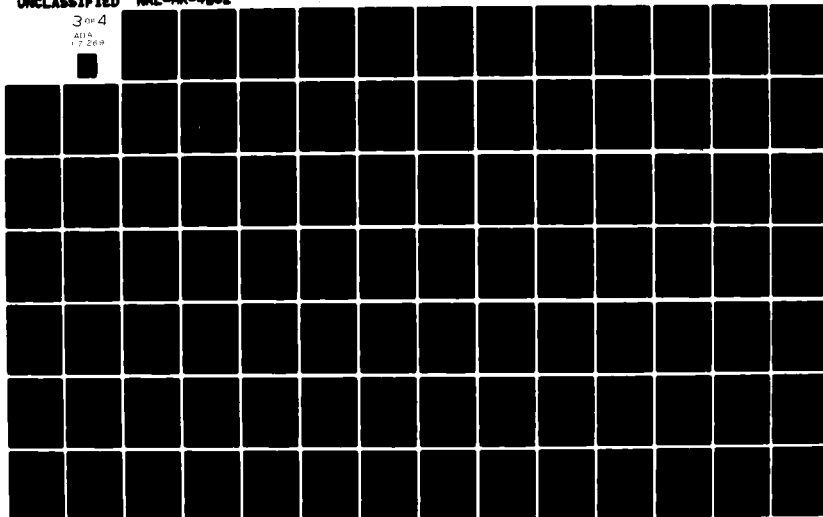
F/8 4/1

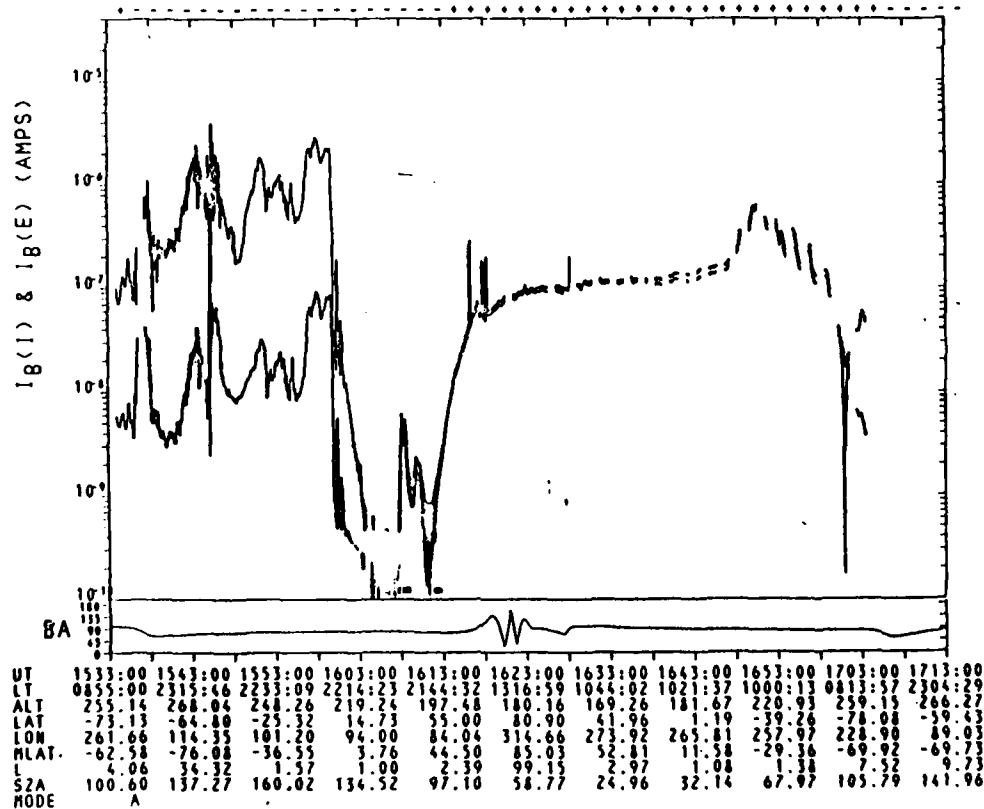
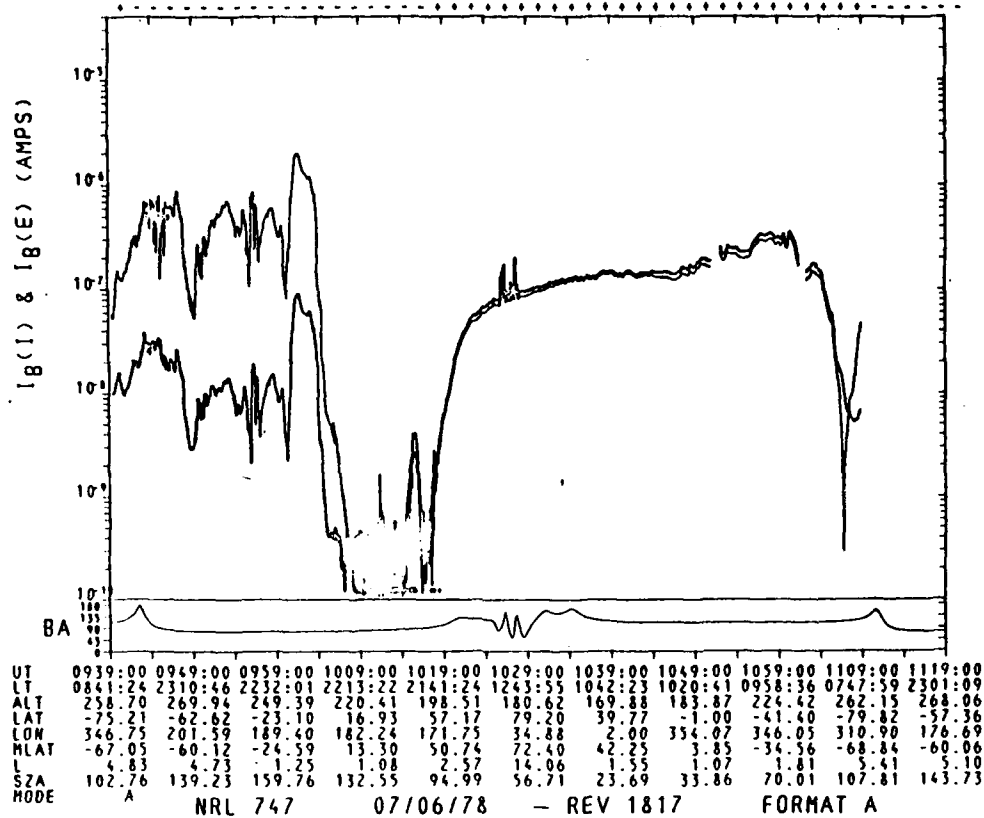
UNCLASSIFIED

NL

3 of 4

ADN  
17 269





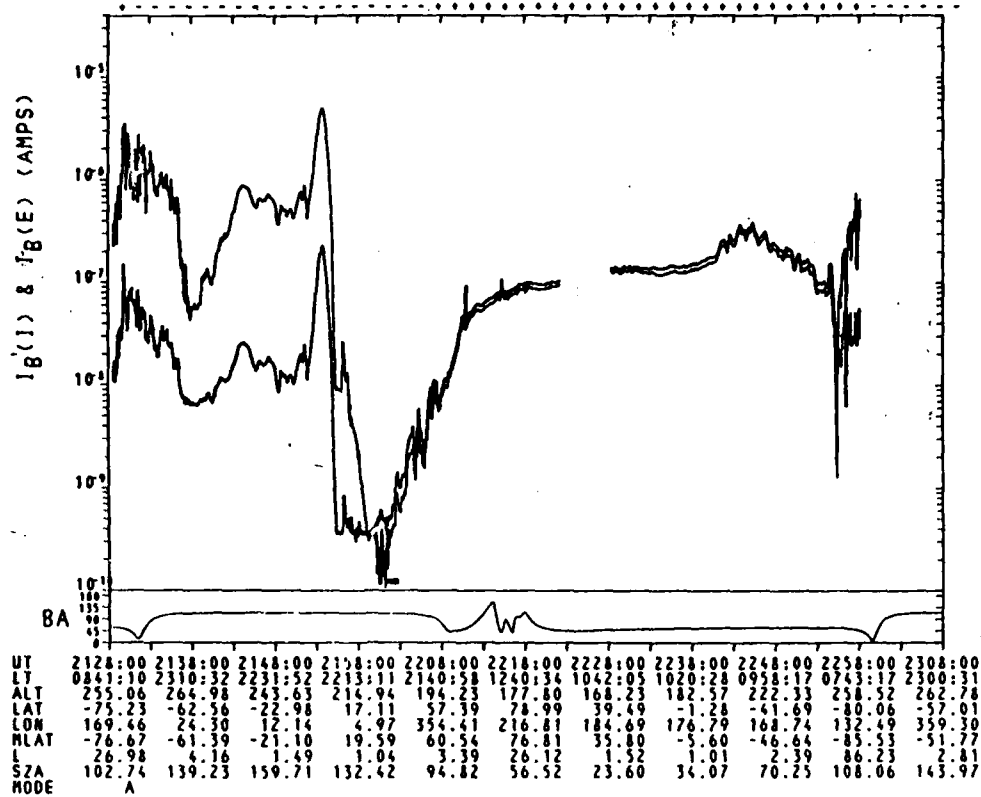


NRL 747

07/06/78

REV 1821

FORMAT A

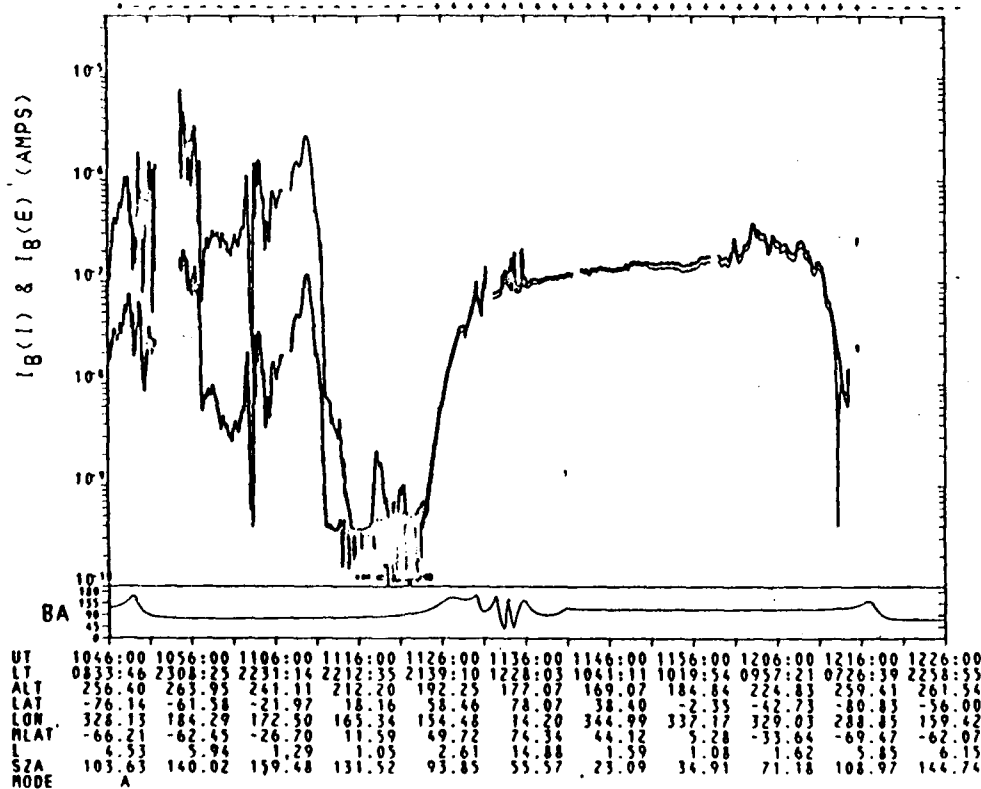


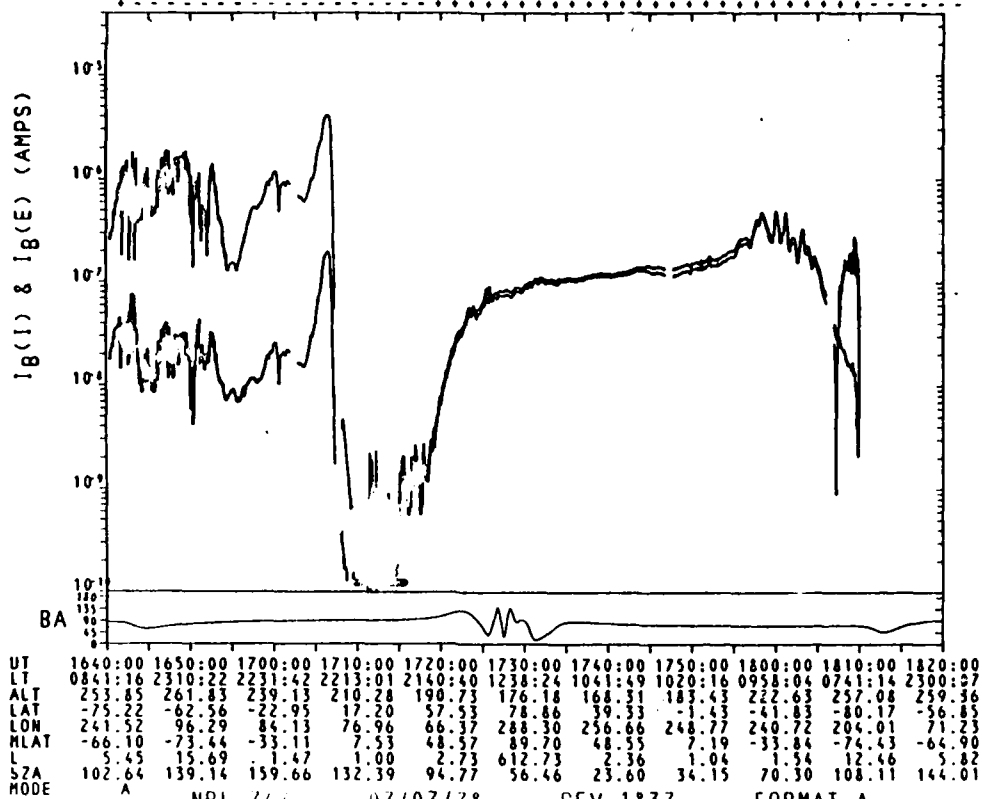
NRL 747

07/07/78

REV 1830

FORMAT A



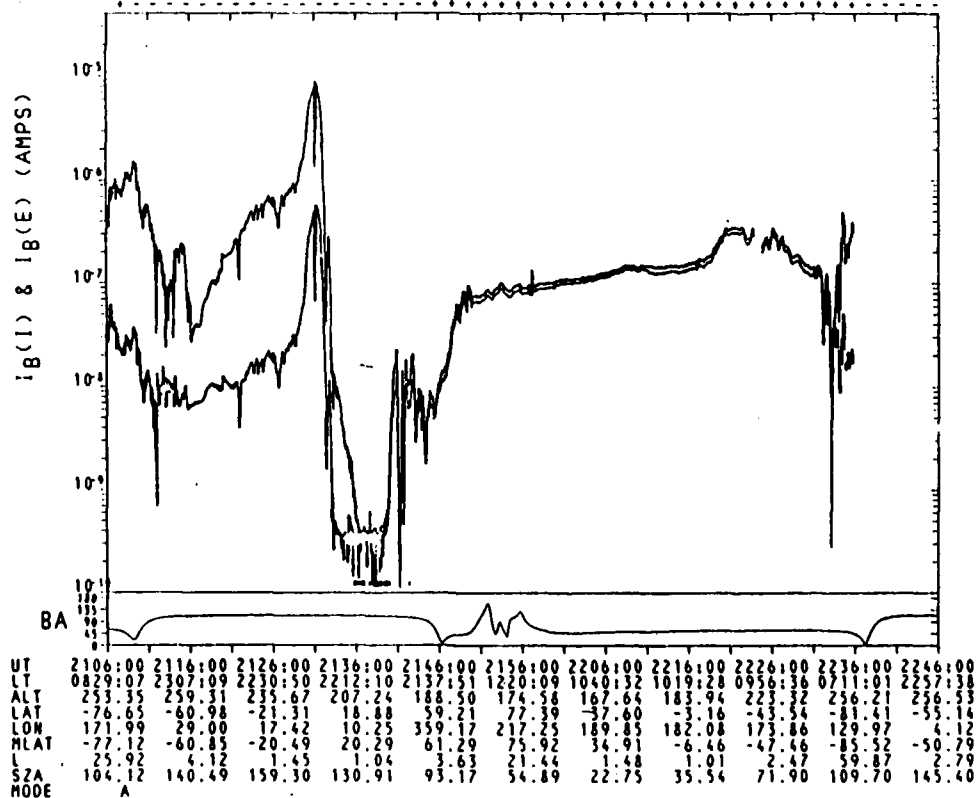


NRL 747

07/07/78

REV 1837

FORMAT A

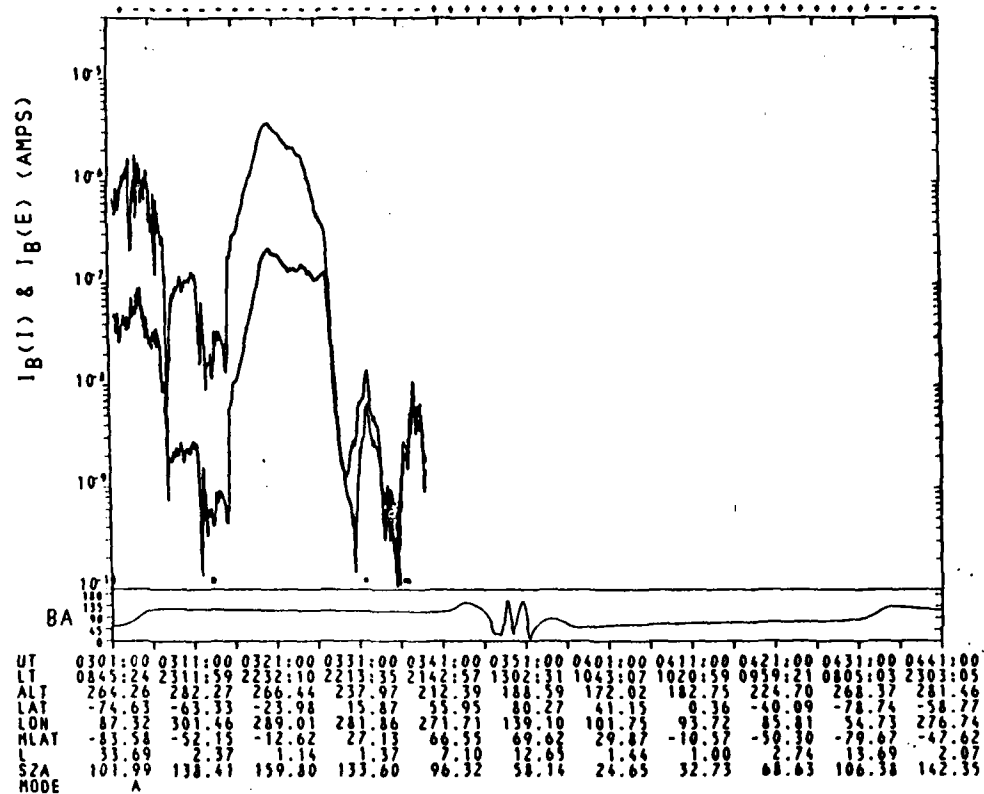


NRL 747

07/08/78

REV 1841

FORMAT A

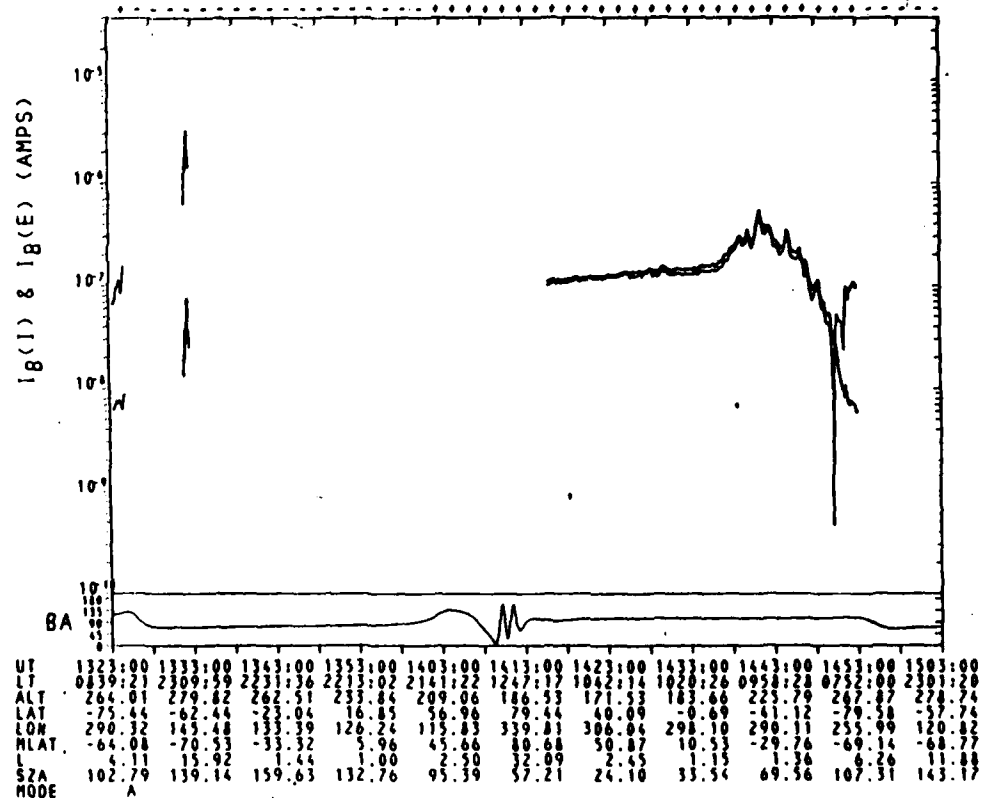


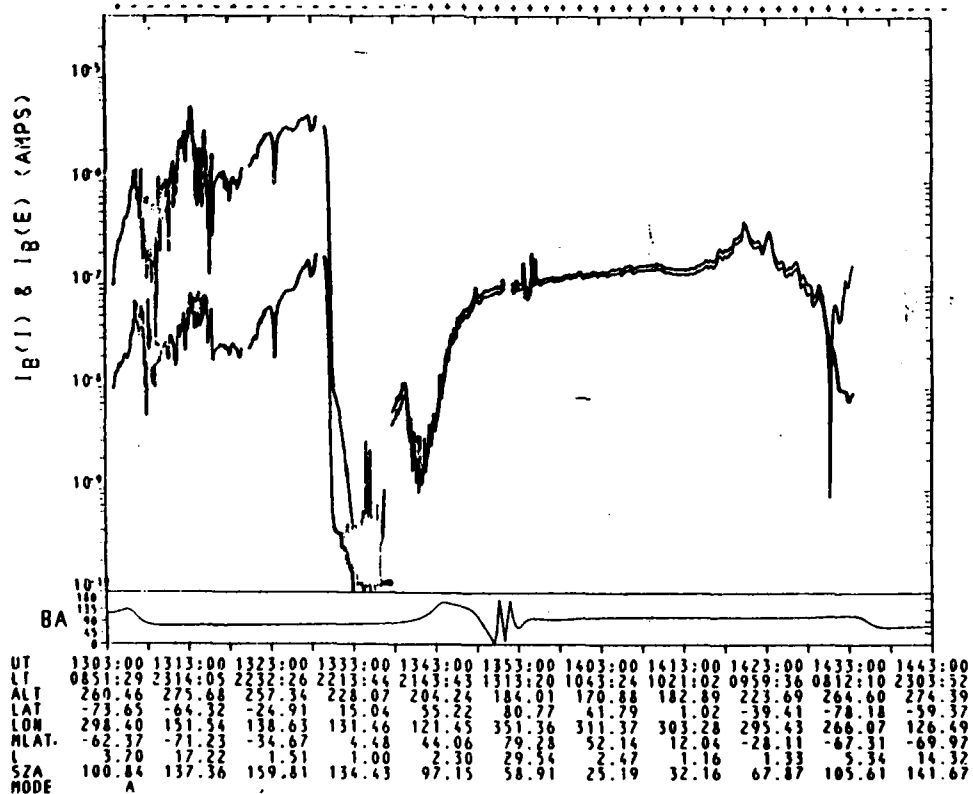
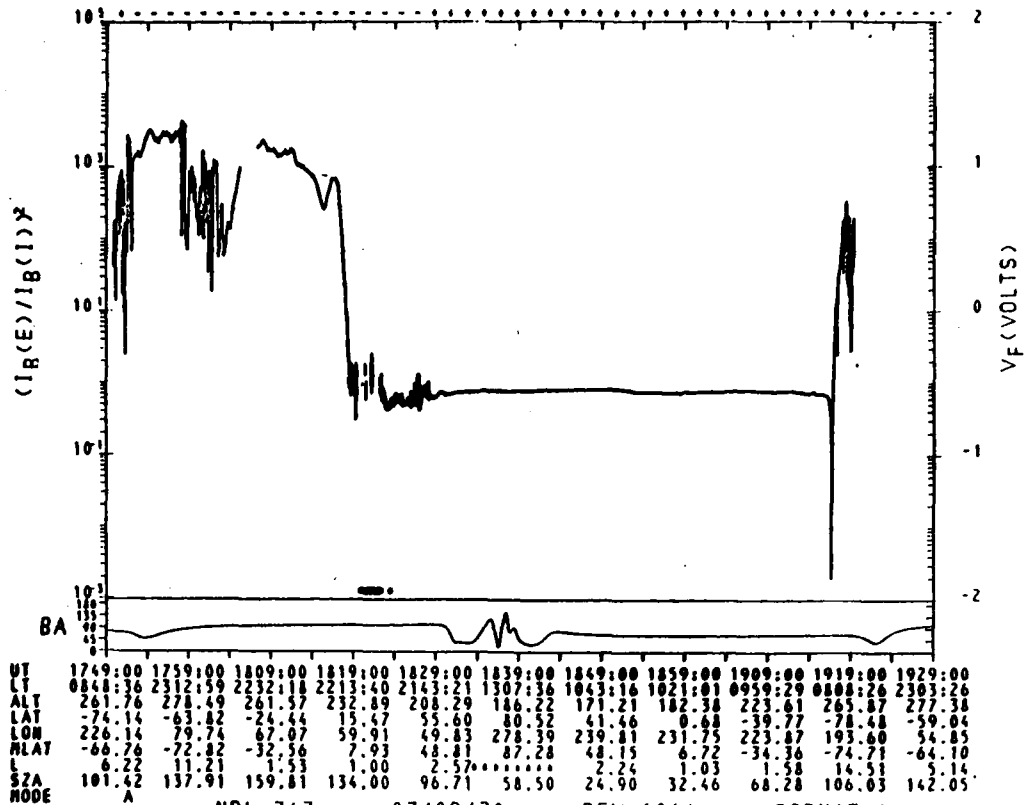
NRL 747

07/08/78

REV 1848

FORMAT A



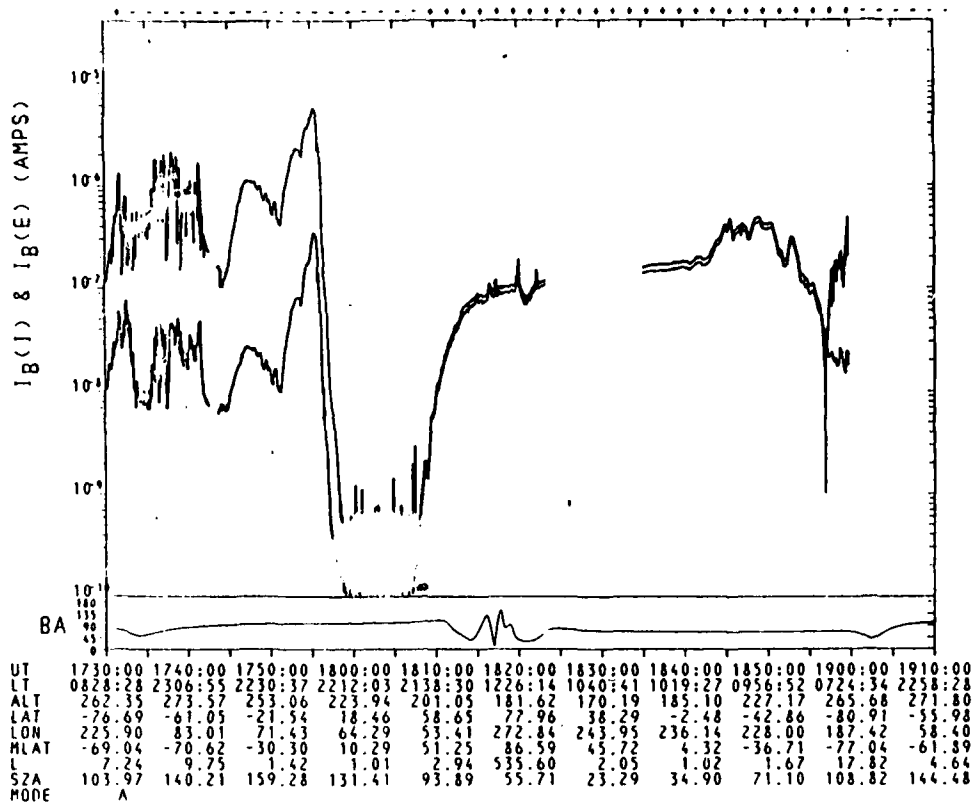


NRL 747

07/09/78

REV 1867

FORMAT A

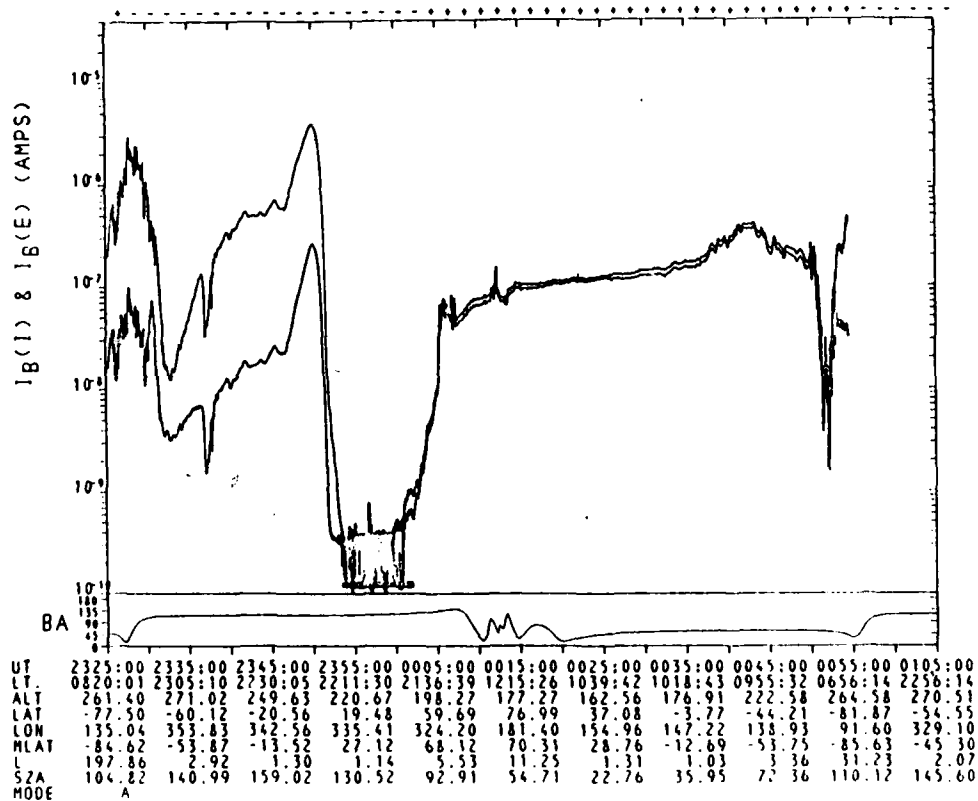


NRL 747

07/09/78

REV 1871

FORMAT A



NRL 747

07/10/78

REV 1882

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

UT	1540:00	1550:00	1600:00	1610:00	1620:00	1630:00	1640:00	1650:00	1700:00	1710:00	1720:00
LT	0845:01	2311:22	2231:37	2212:57	2141:38	1251:00	1042:03	1020:13	0958:22	0753:32	2301:18
ALT	258.34	269.61	248.36	219.04	197.09	179.71	169.60	153.83	224.25	242.03	247.70
LAT	-74.63	-63.23	-23.74	16.31	36.37	79.69	40.34	-0.40	-40.81	-79.33	-57.95
LONG	257.57	111.65	99.22	92.05	81.72	306.57	271.84	263.87	255.01	222.70	84.64
MLAT	-64.28	-74.59	-34.90	3.44	46.23	86.62	31.08	9.84	-31.09	-71.64	-48.03
L	4.55	24.77	1.50	1.00	2.37	131.67	2.73	1.08	-1.43	1.82	8.22
SZA	101.71	138.17	159.62	133.40	93.98	57.74	24.50	33.21	69.08	106.80	142.73
MODE	A										

NRL 747

07/10/78

REV 1886

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

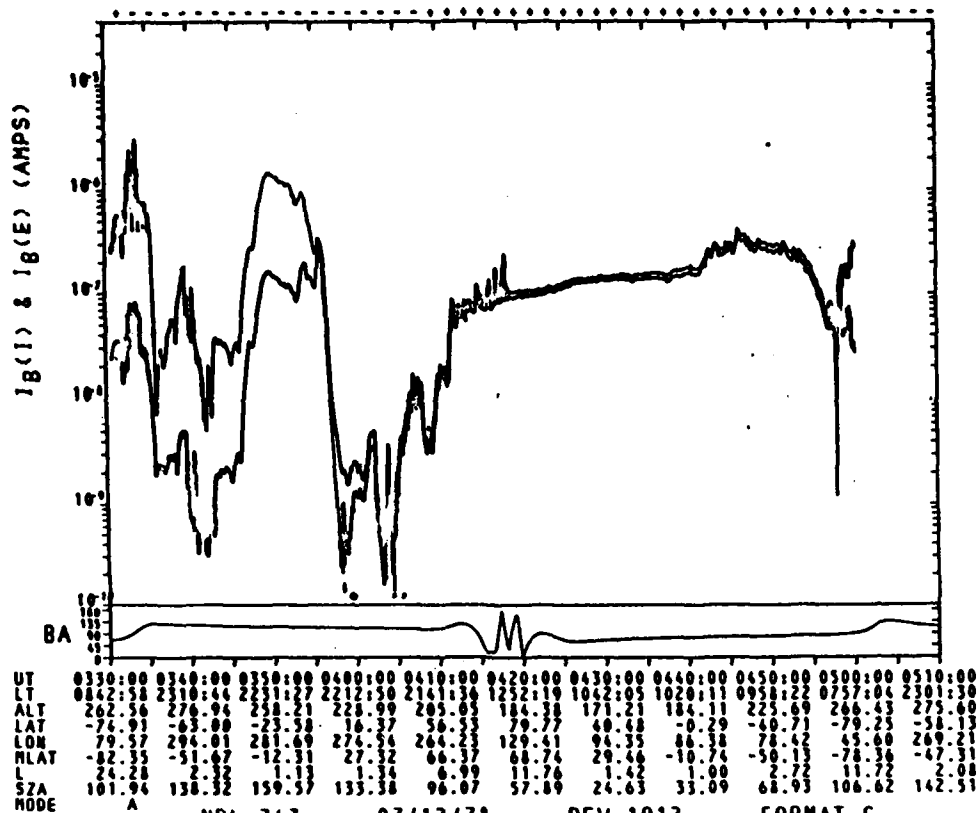
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LT	0841:17	2310:17	2231:22	2212:47	2141:22	1250:13	1042:02	1020:10	0958:17	0753:13	2301:22
ALT	264.01	278.82	260.46	231.26	206.87	183.48	171.73	154.56	226.51	247.86	257.45
LAT	-75.14	-62.77	-23.36	16.56	36.70	79.64	40.33	-0.44	-40.83	-79.36	-57.91
LONG	167.89	22.64	10.42	3.27	352.91	217.63	183.08	173.11	167.14	133.86	353.02
MLAT	-76.90	-61.27	-21.14	19.38	60.18	77.30	36.32	-3.08	-46.92	-84.50	-52.50
L	28.73	4.13	1.50	1.04	60.31	29.11	1.74	1.01	2.32	105.08	8.46
SZA	102.21	138.56	159.56	133.19	93.88	57.72	24.51	33.22	69.09	106.78	142.65
MODE	A										

NRL 747

07/11/78

REV 1890

FORMAT A

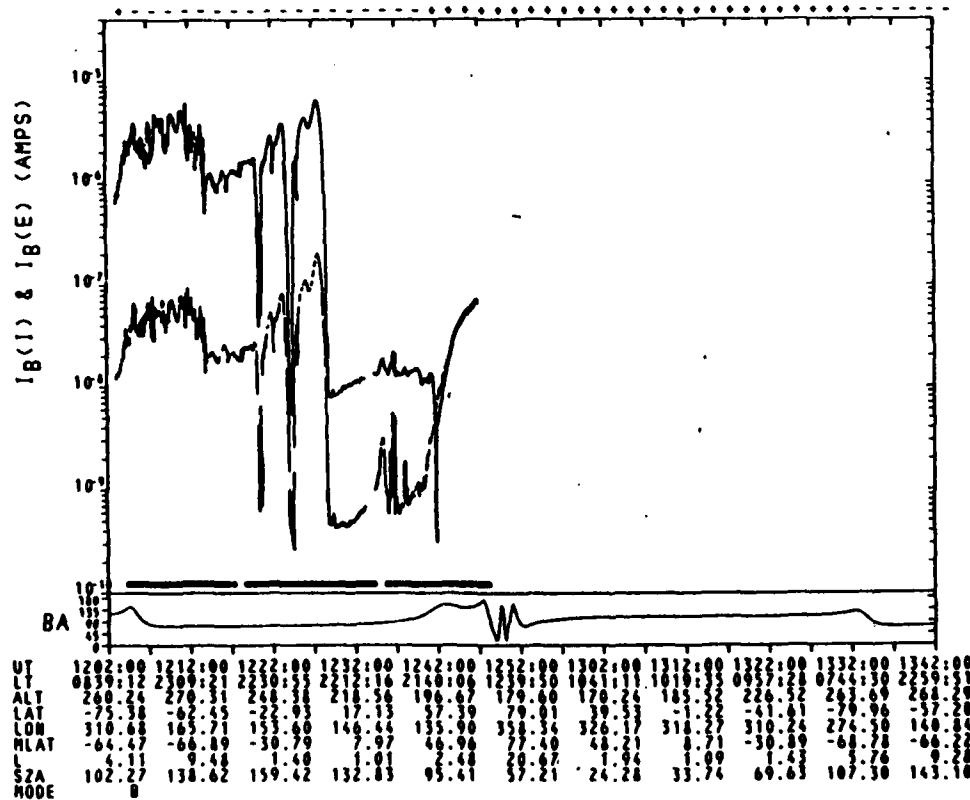


NRL 747

07/12/78

REV 1912

FORMAT C

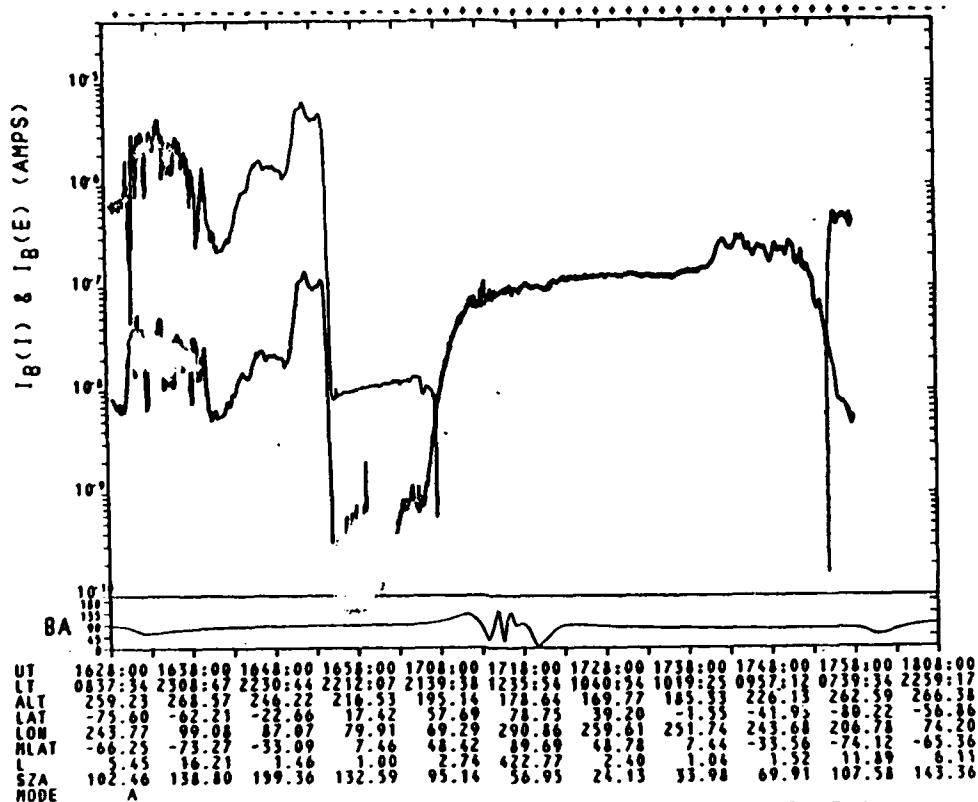


NRL 747

07/12/78

REV 1915

FORMAT A

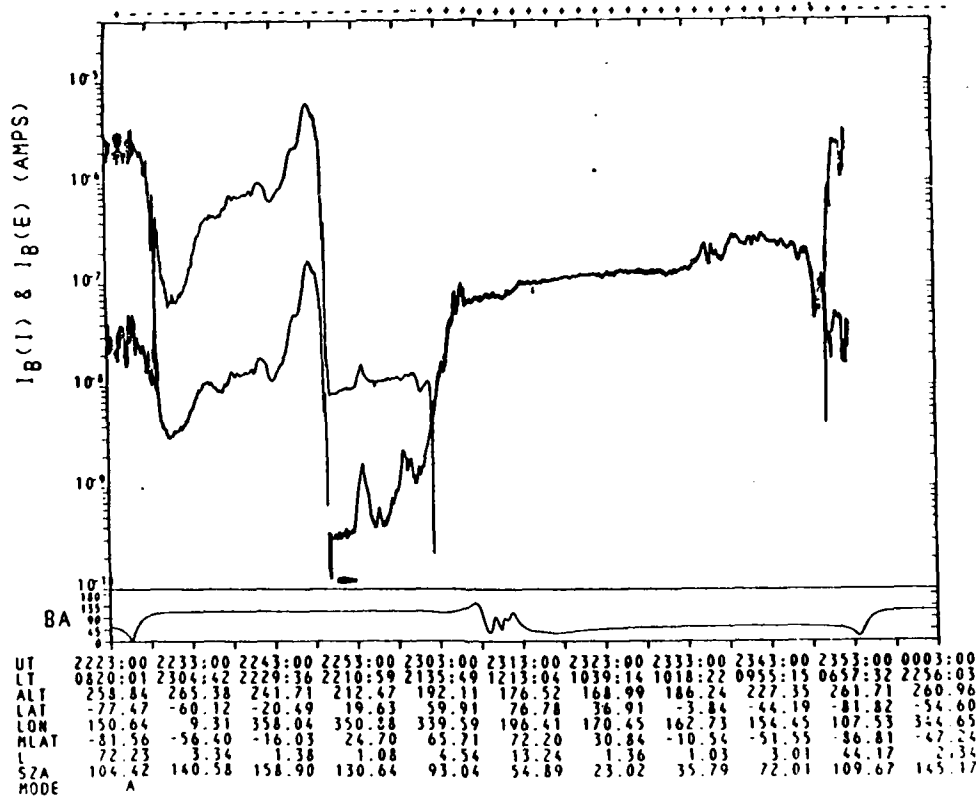


NRL 747

07/12/78

REV 1919

FORMAT A



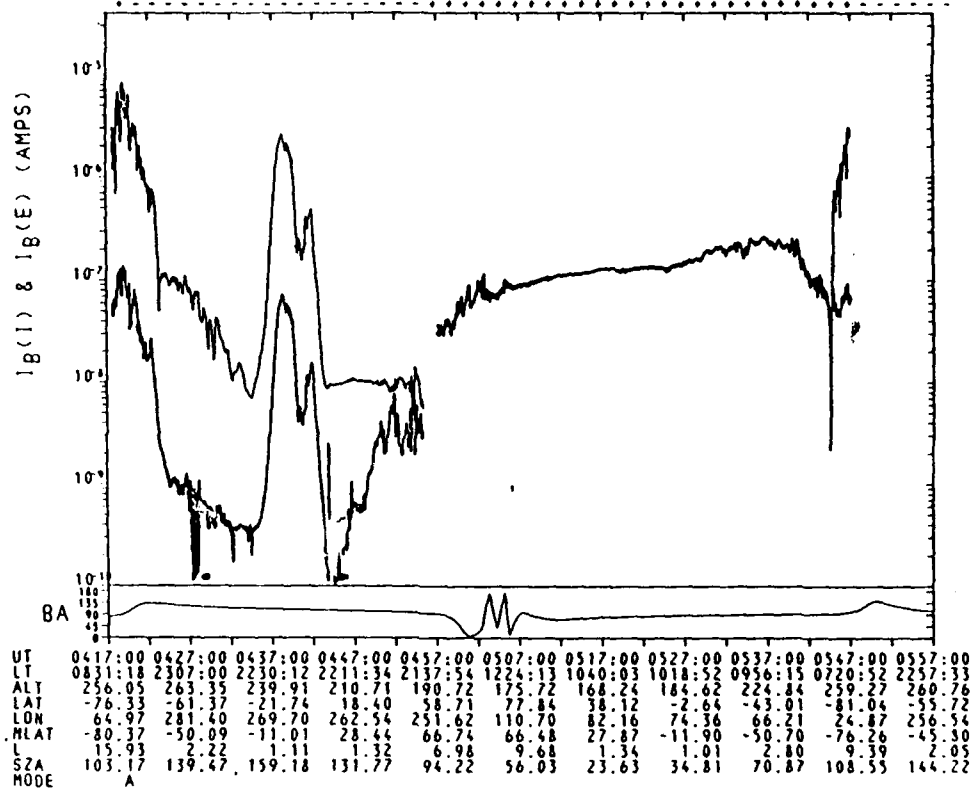


NRL 747

07/13/78

REV 1923

FORMAT A



NRL 747

07/13/78

REV 1929

FORMAT C

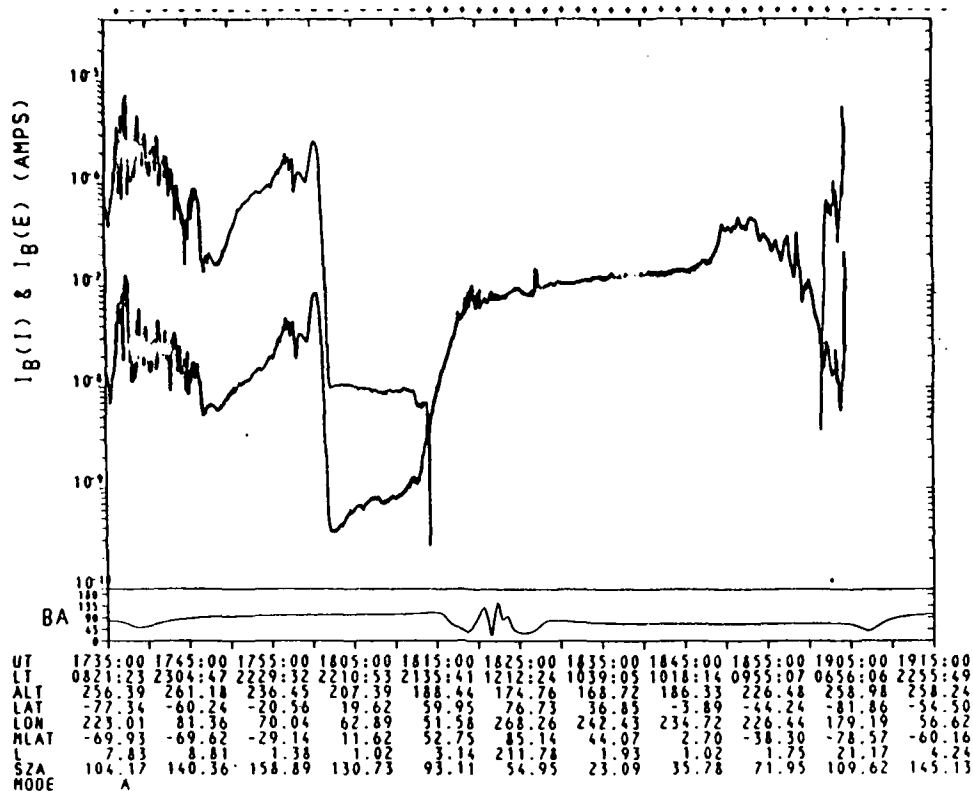
NOT CURRENTLY AVAILABLE

NRL 747

07/13/78

REV 1932

FORMAT A

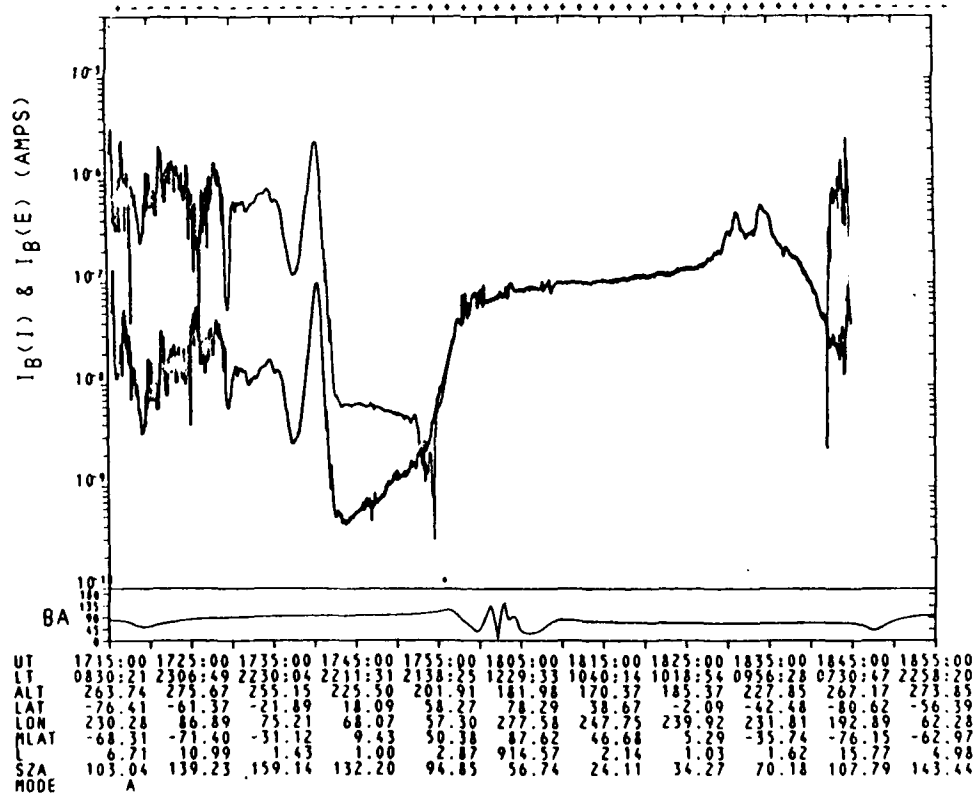


NRL 747

07/14/78

REV 1948

FORMAT A

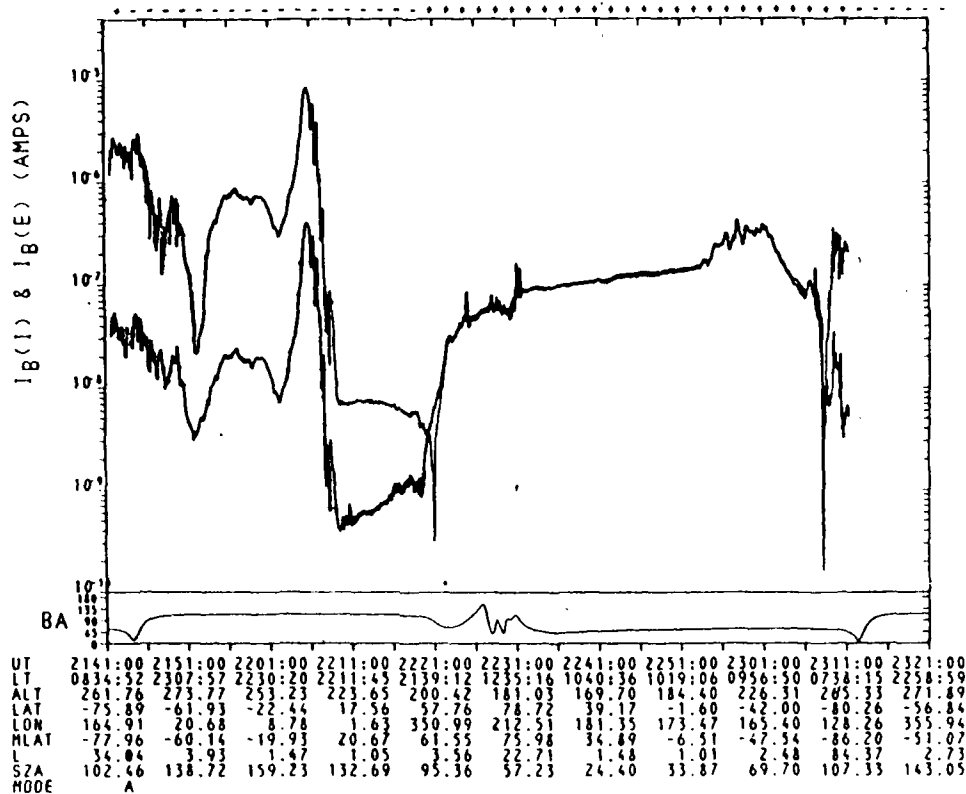


NRL 747

07/14/78

REV 1951

FORMAT A

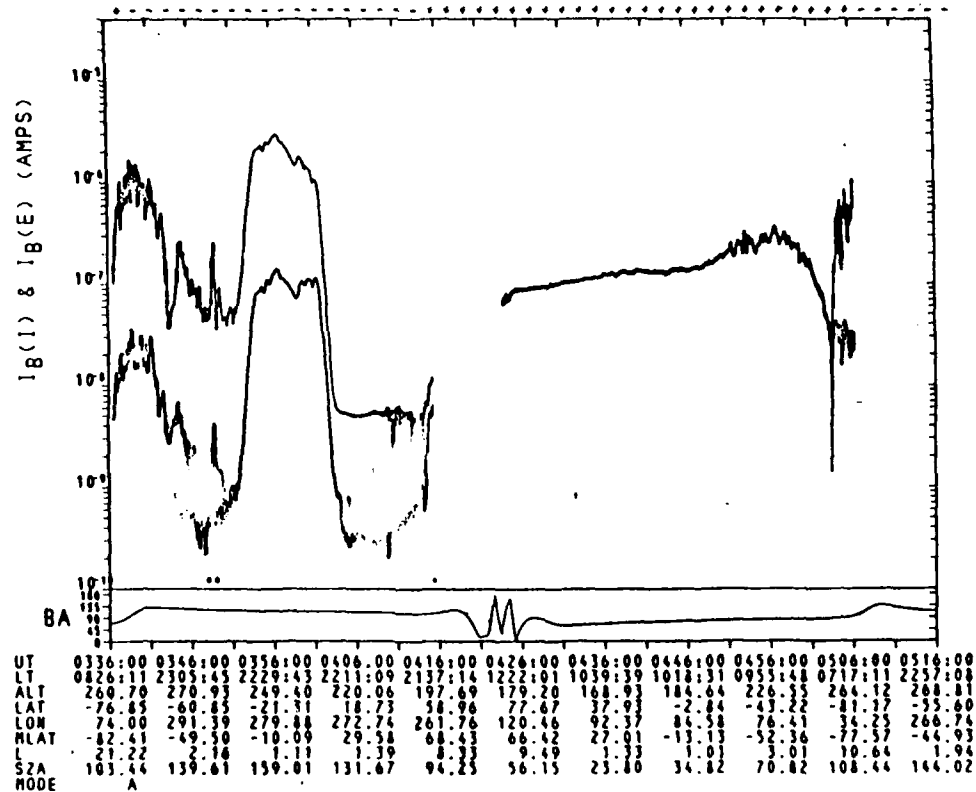


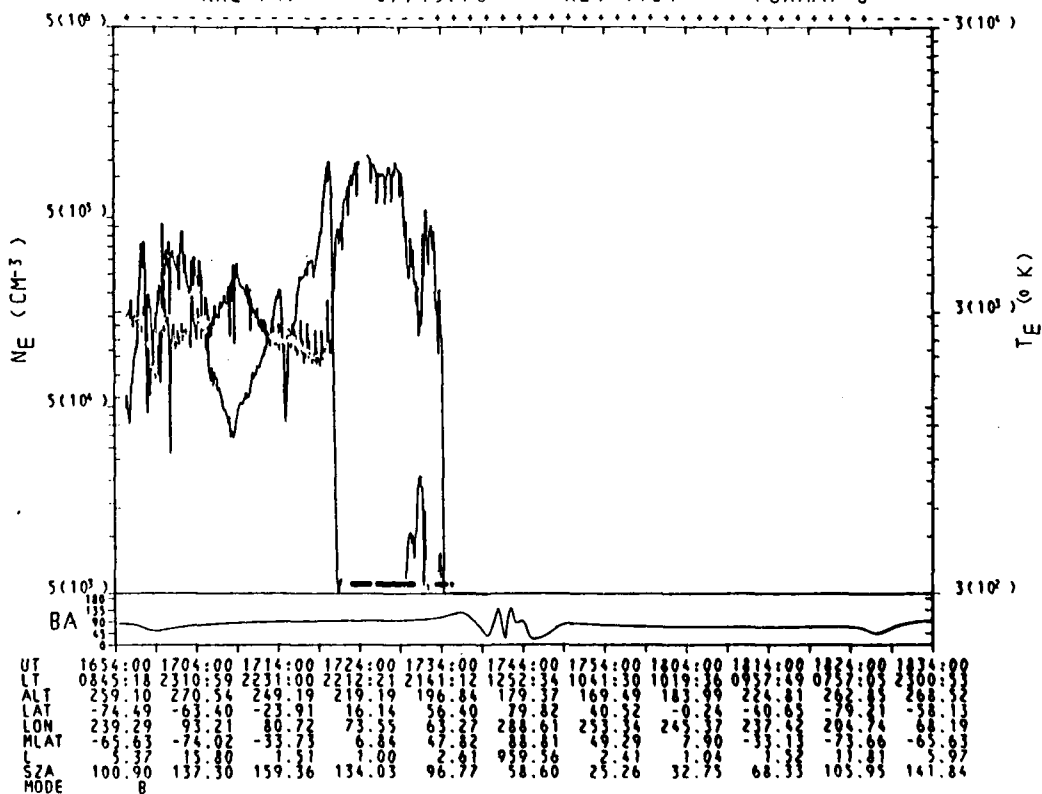
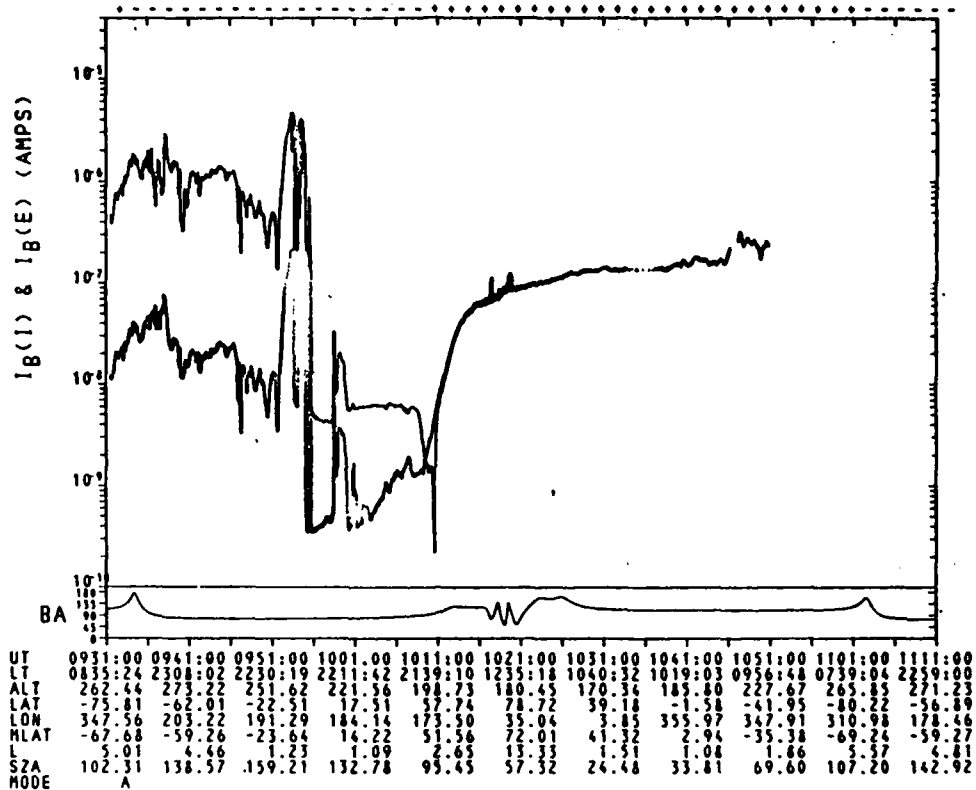
NRL 747

07/15/78

REV 1955

FORMAT A



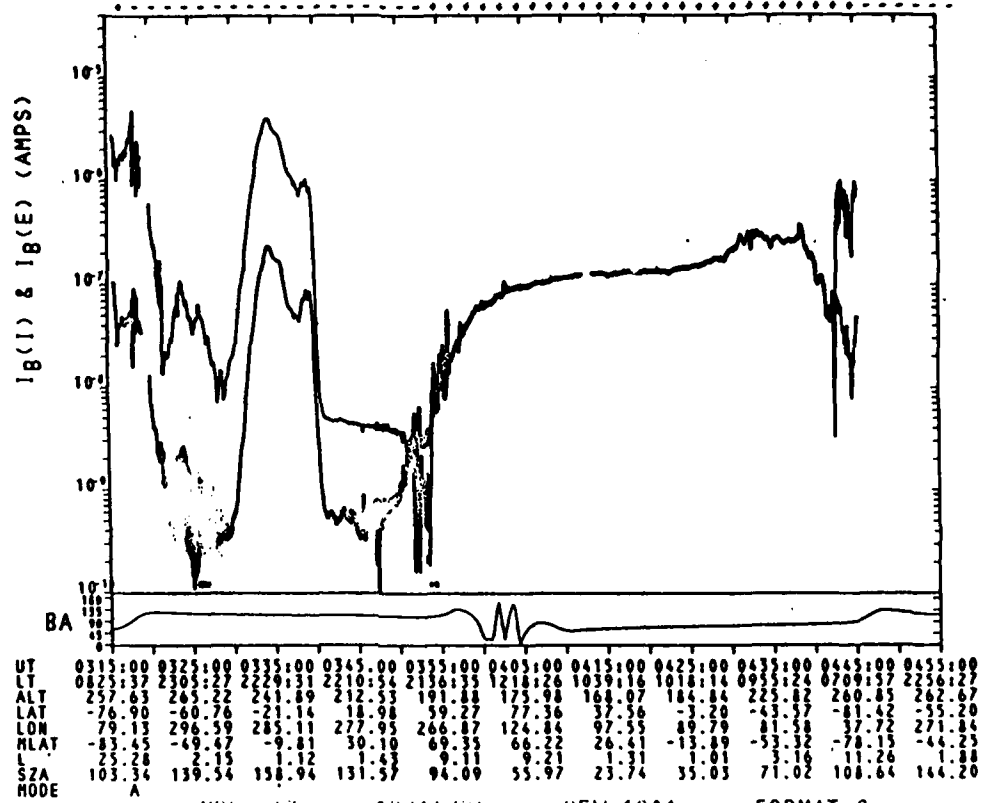


NRL 747

07/16/78

REV 1971

FORMAT A

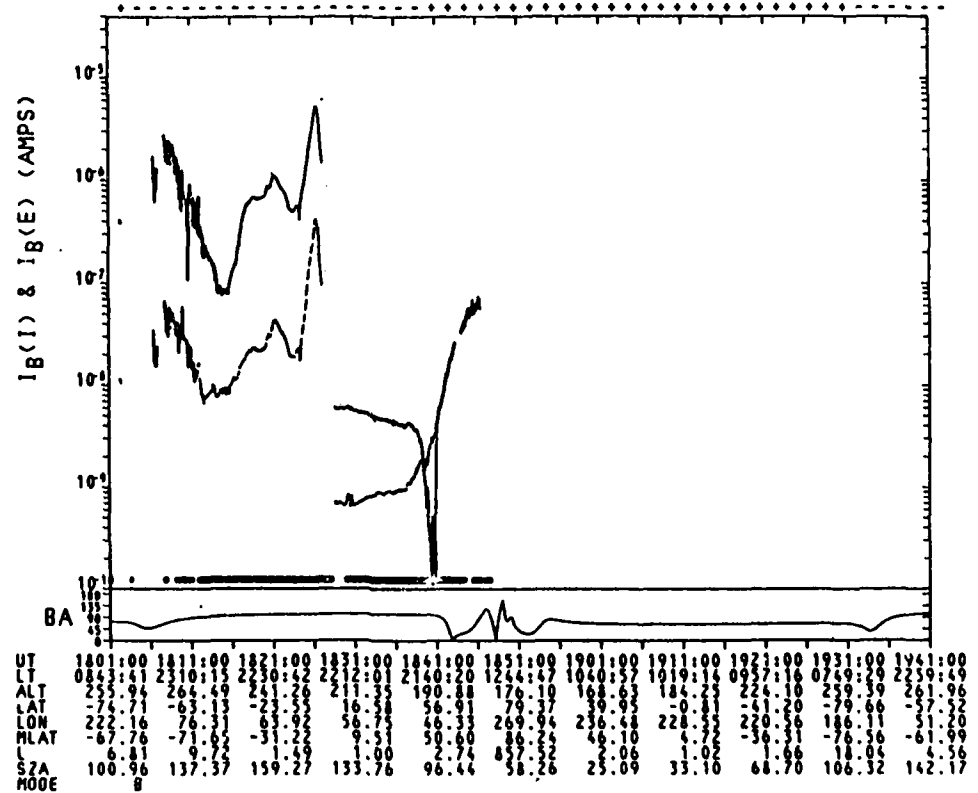


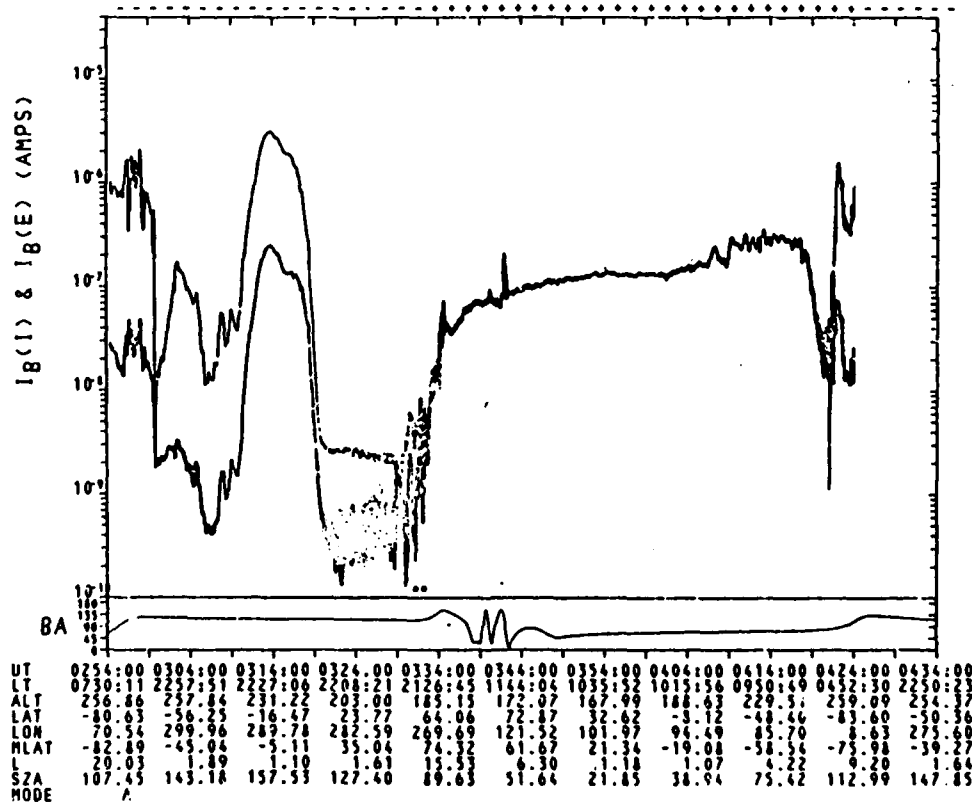
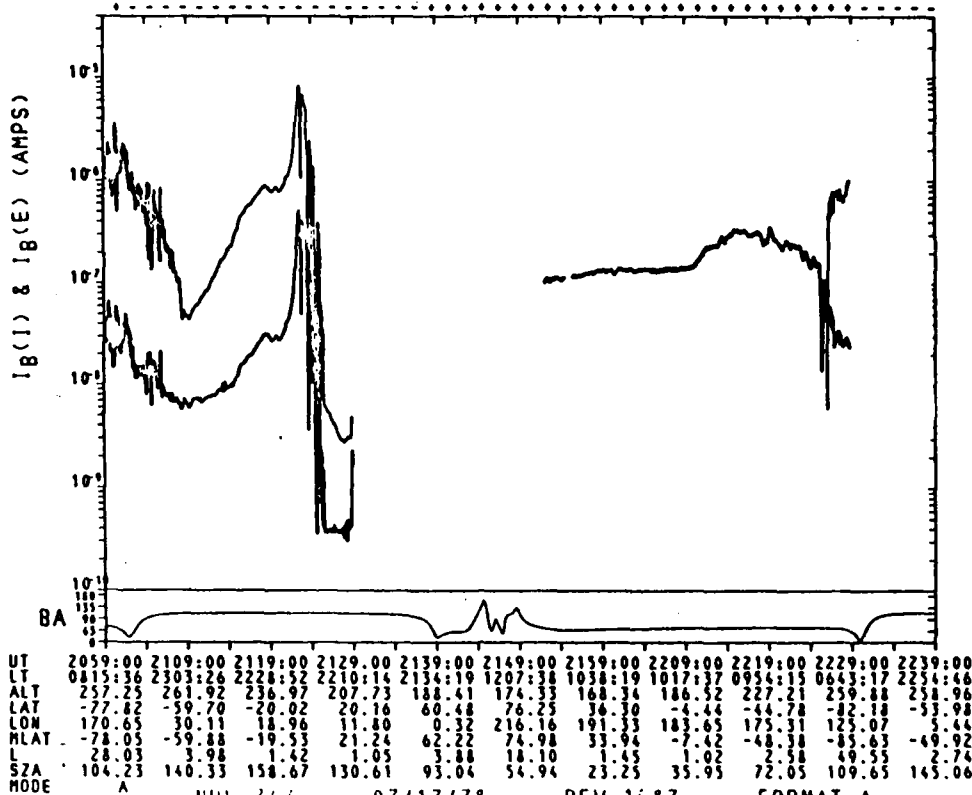
NRL 747

07/16/78

REV 1981

FORMAT C



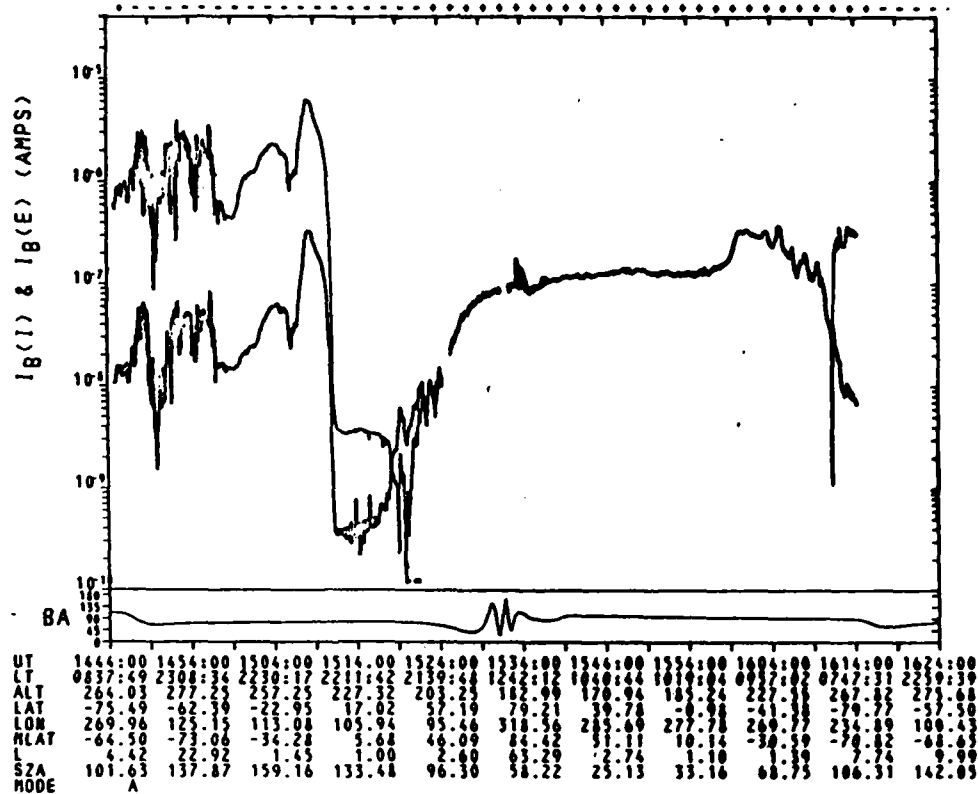


NRL 747

07/17/78

REV 1995

FORMAT A

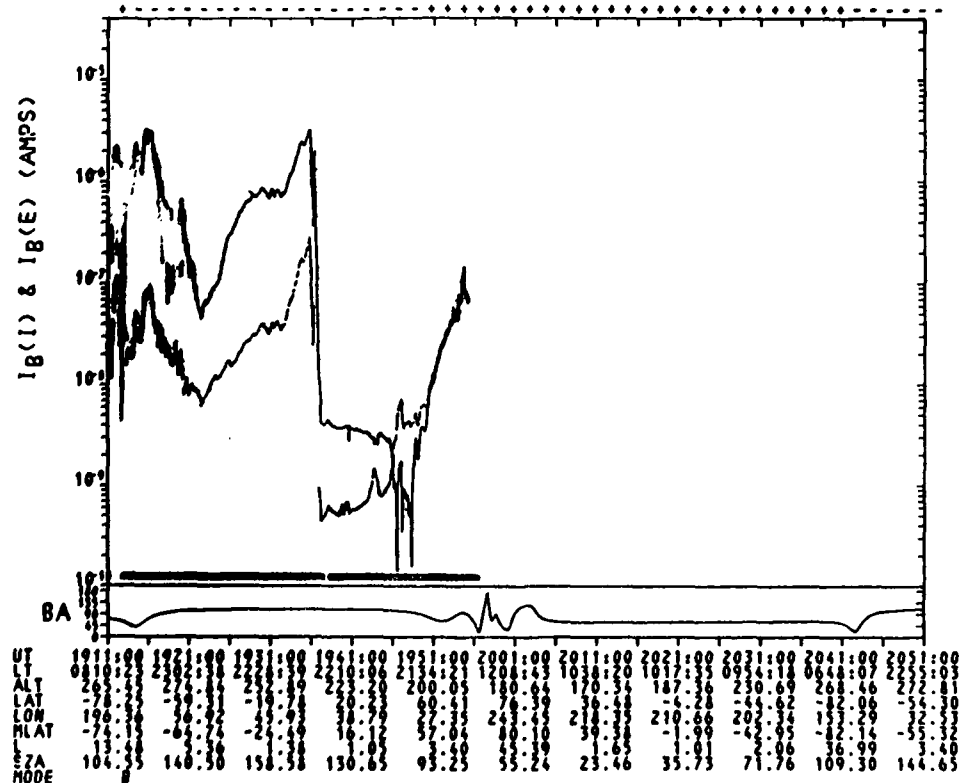


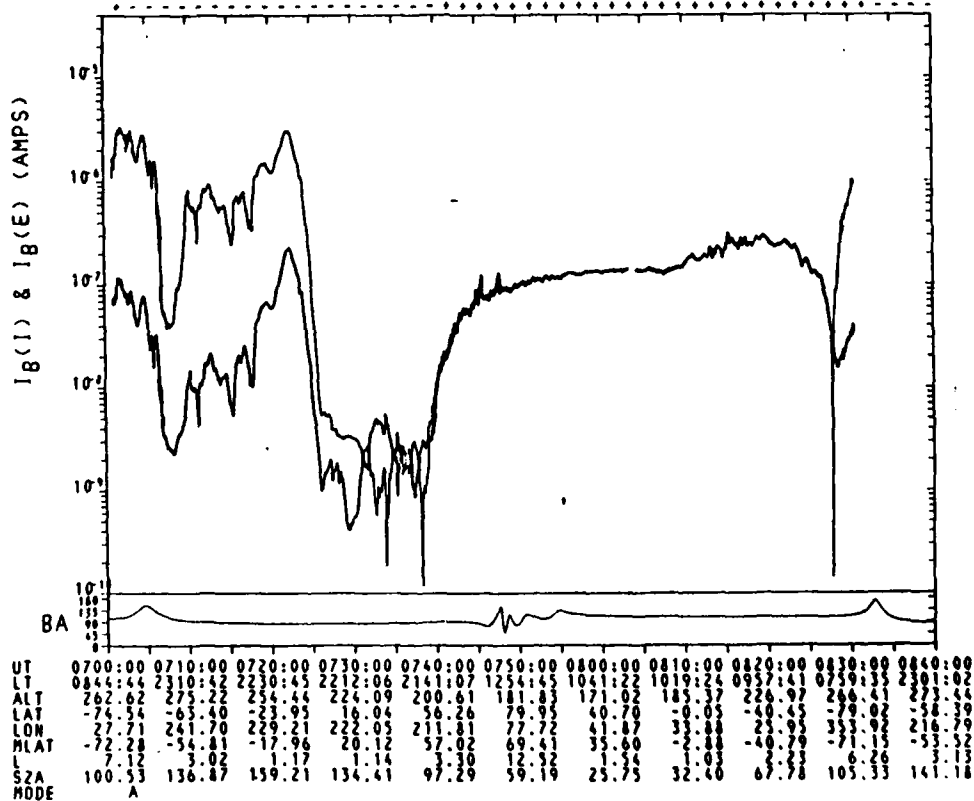
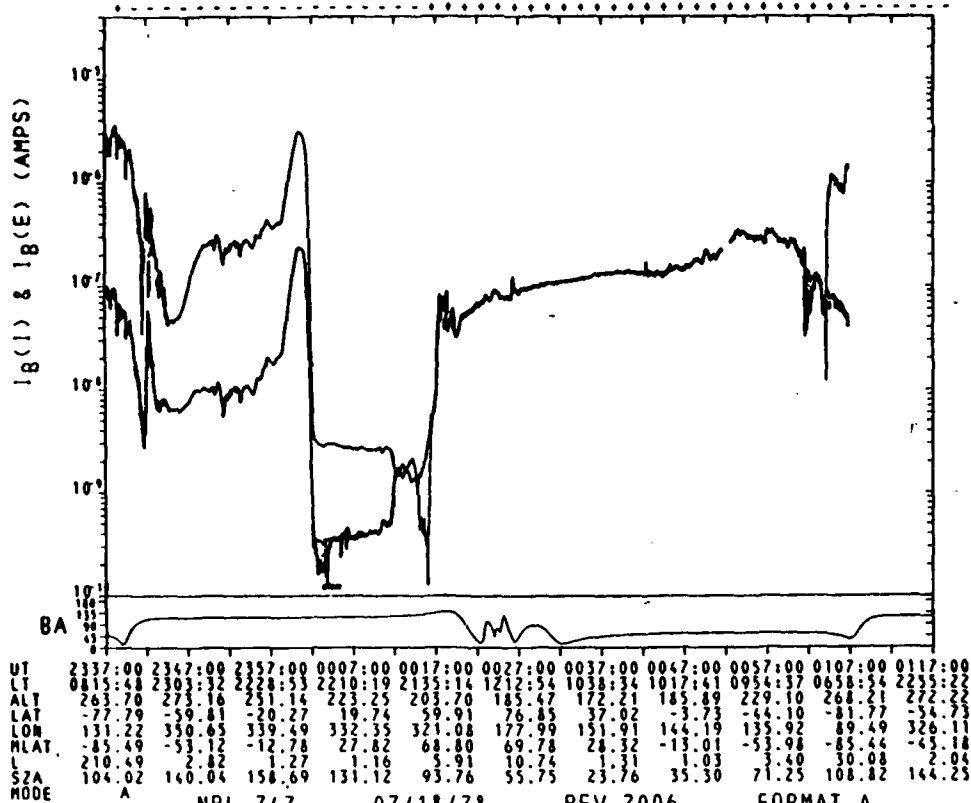
NRL 747

07/17/78

REV 1998

FORMAT C





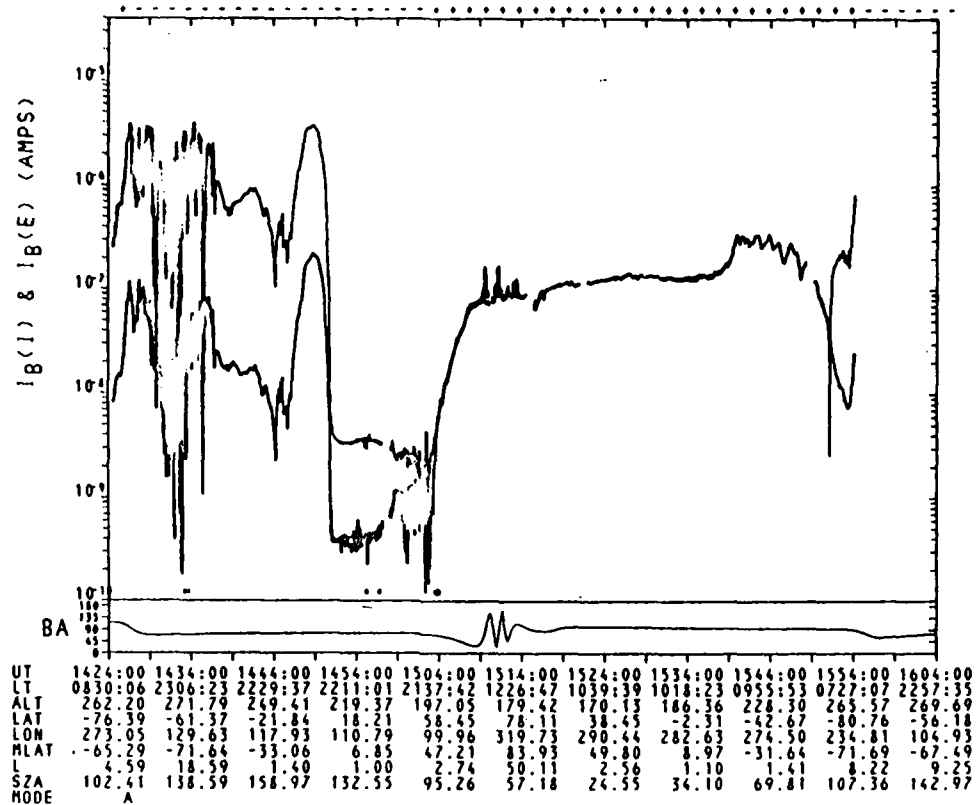


NRL 747

07/18/78

REV 2011

FORMAT A

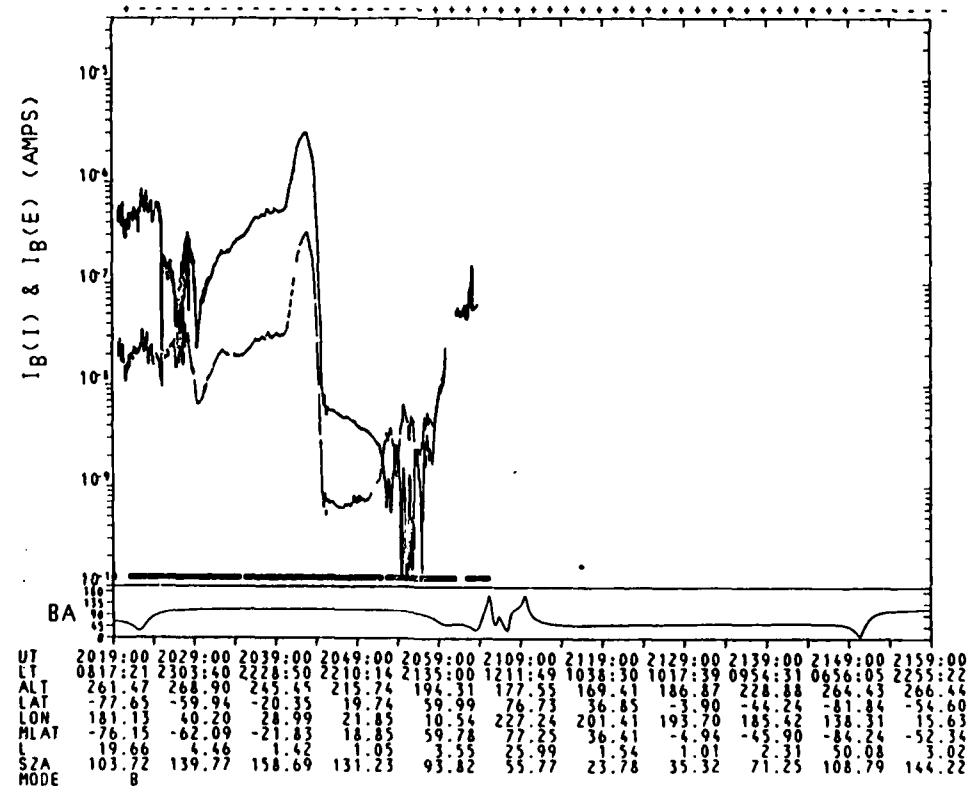


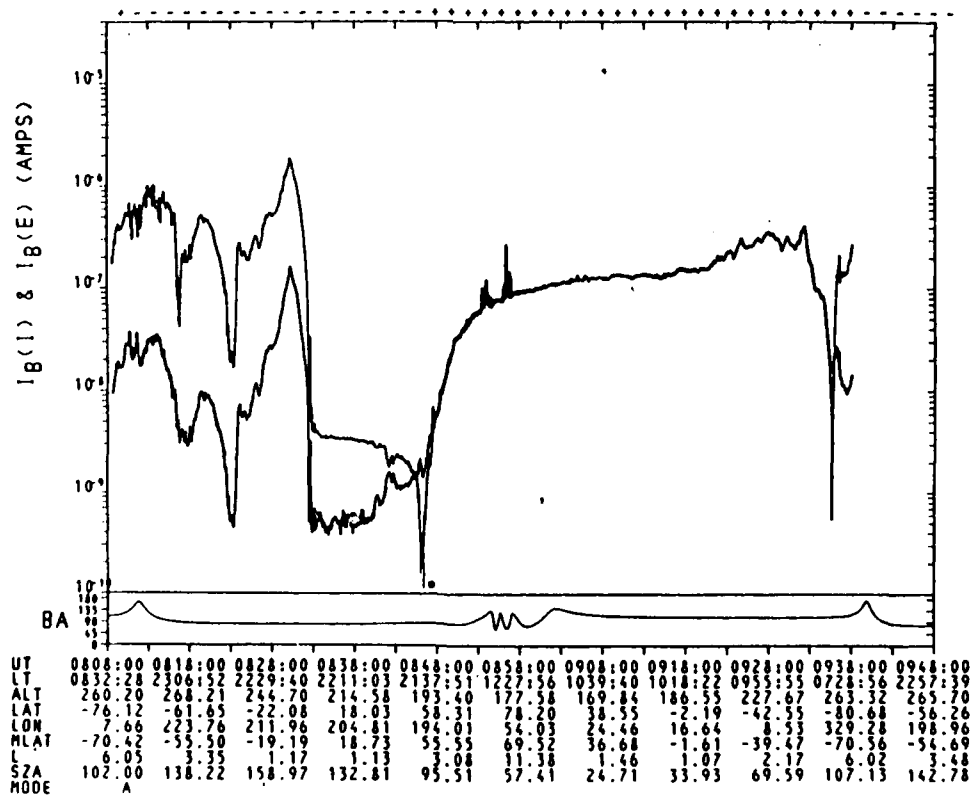
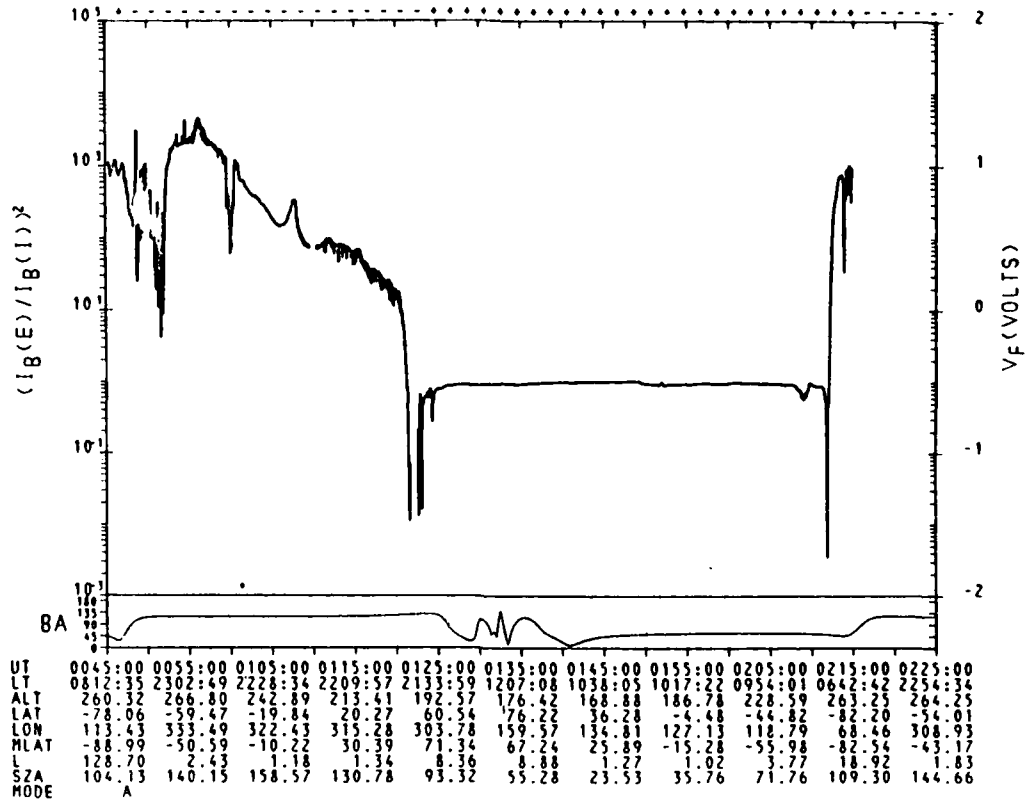
NRL 747

07/18/78

REV 2015

FORMAT C



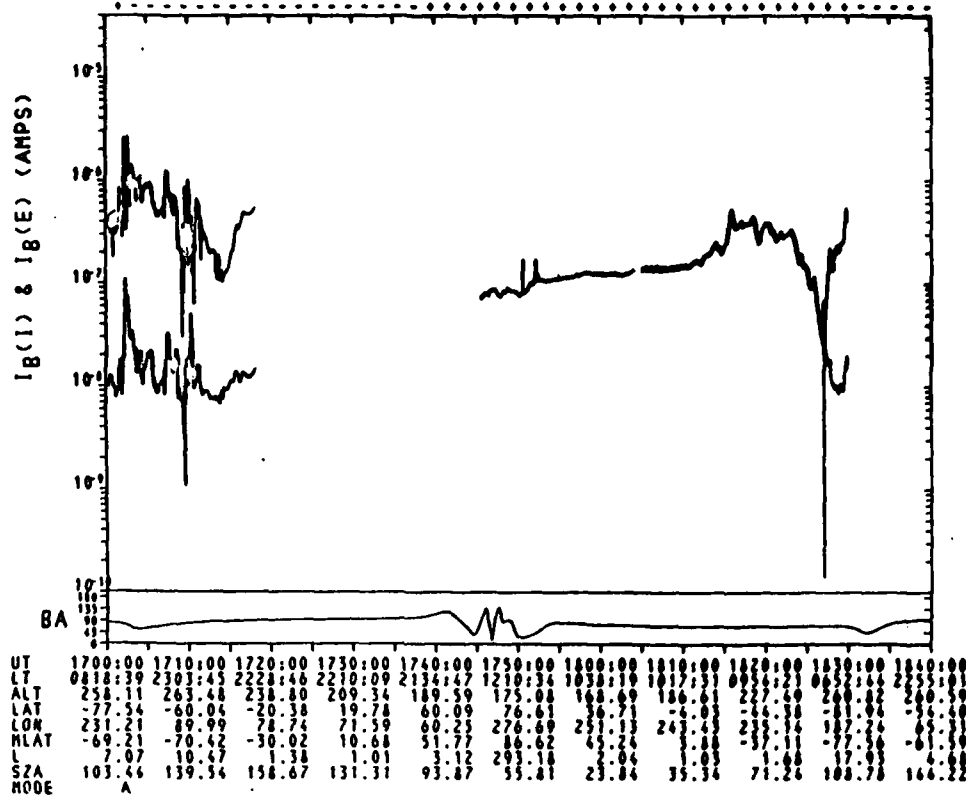


NRL 747

07/19/78

REV 2029

FORMAT A

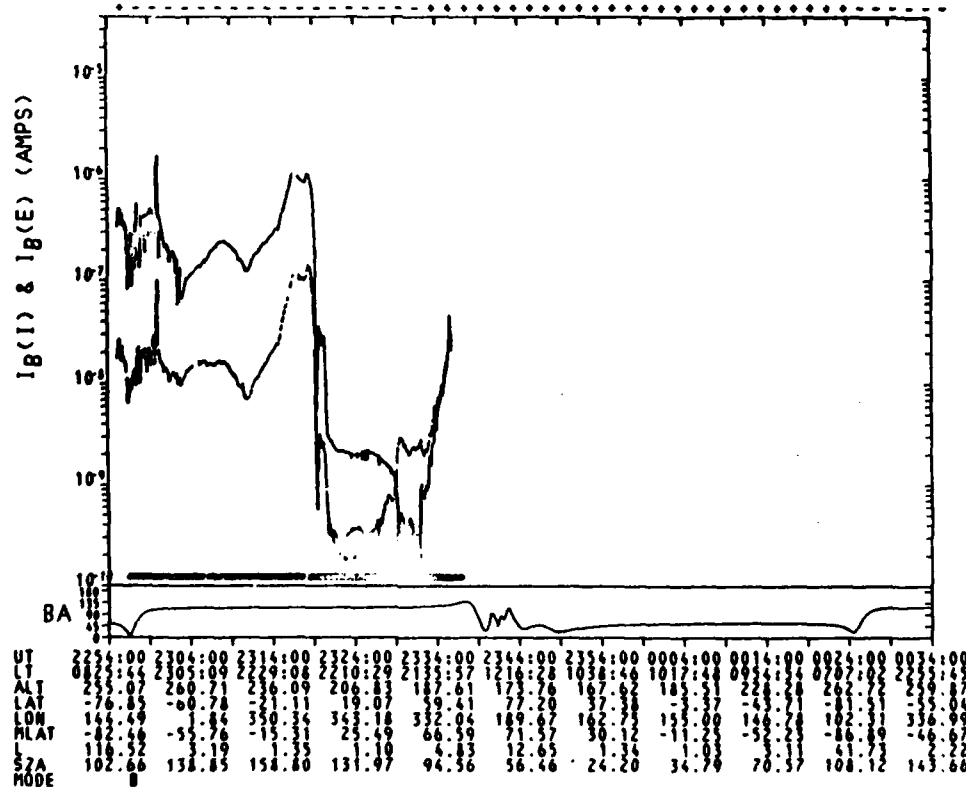


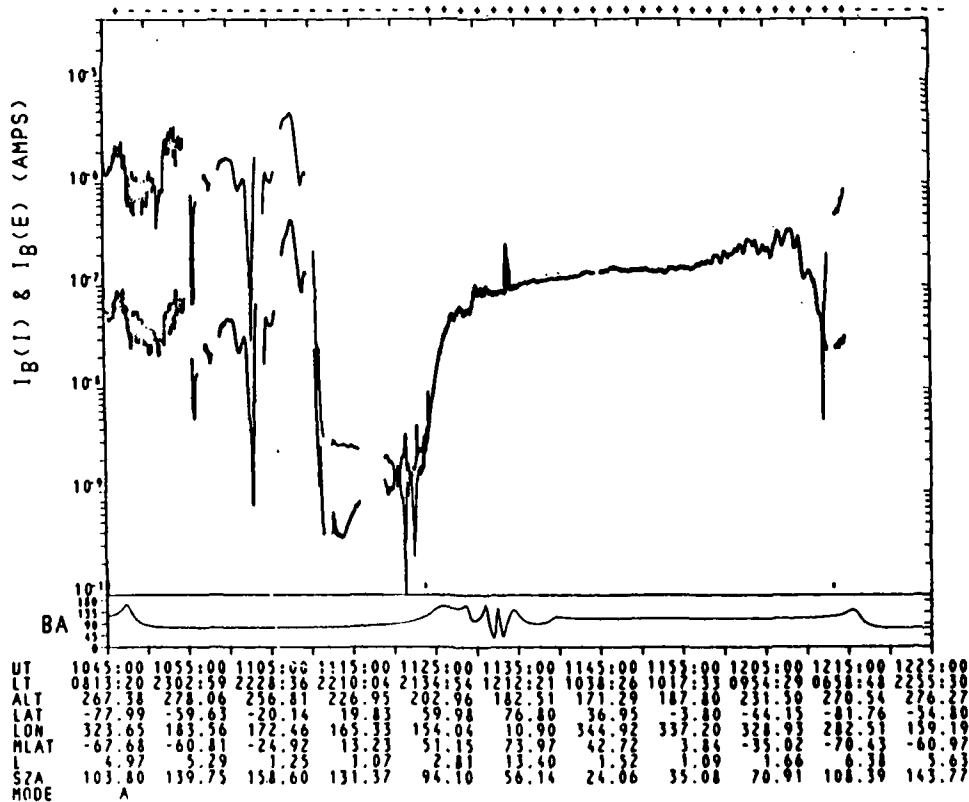
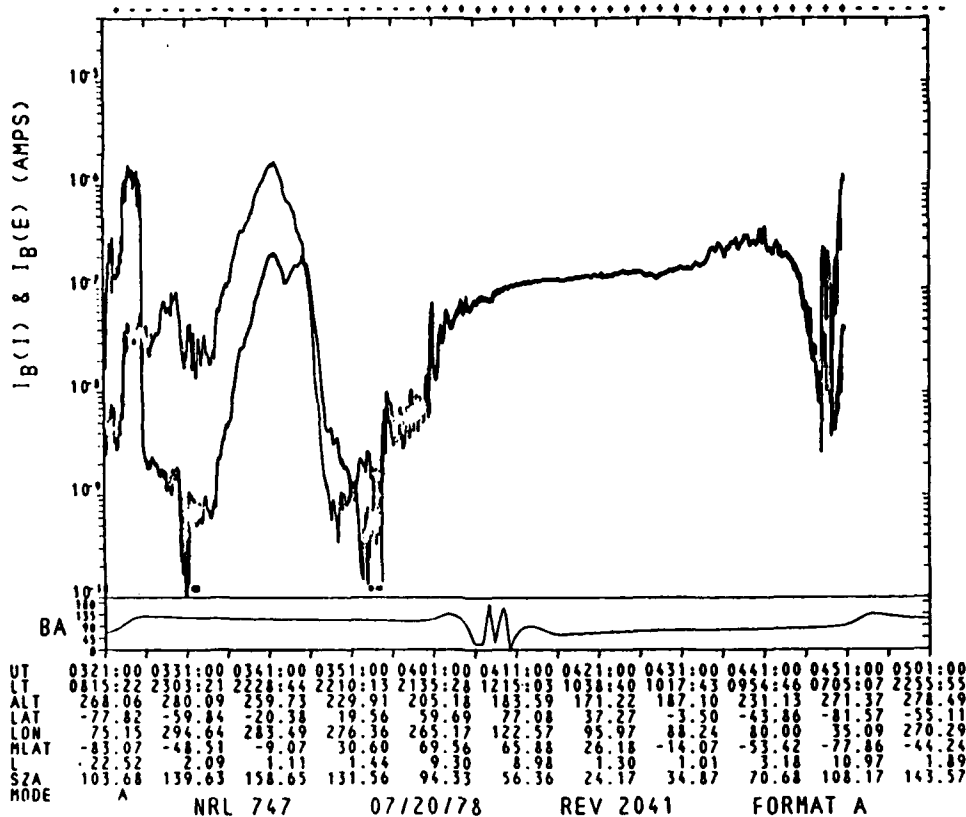
NRL 747

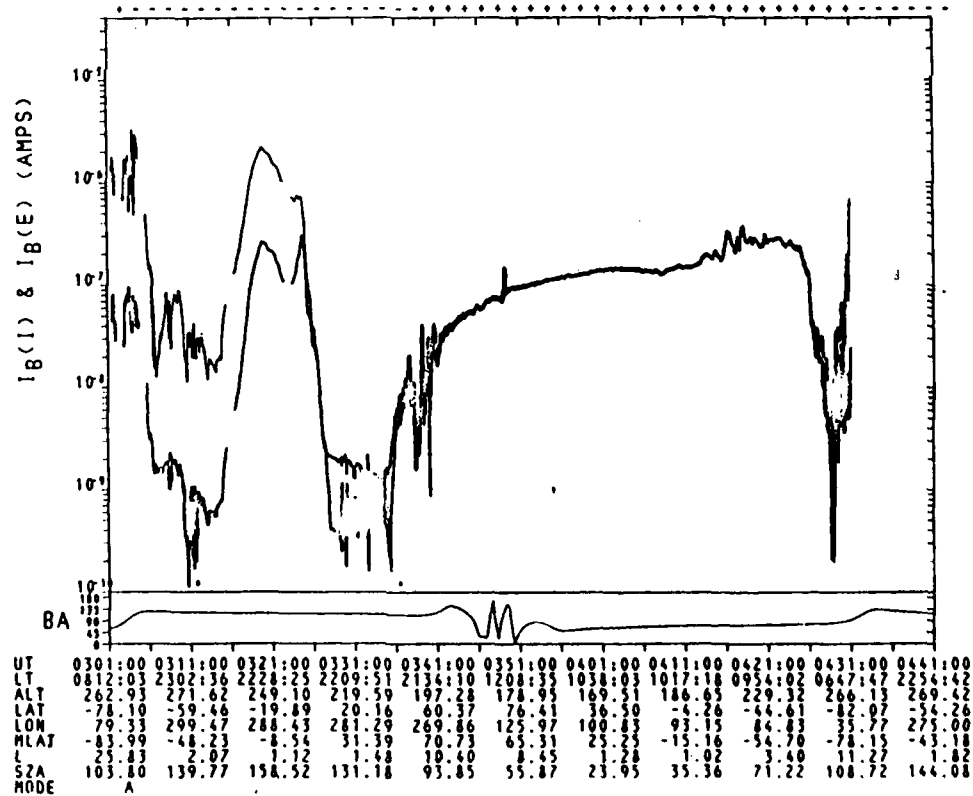
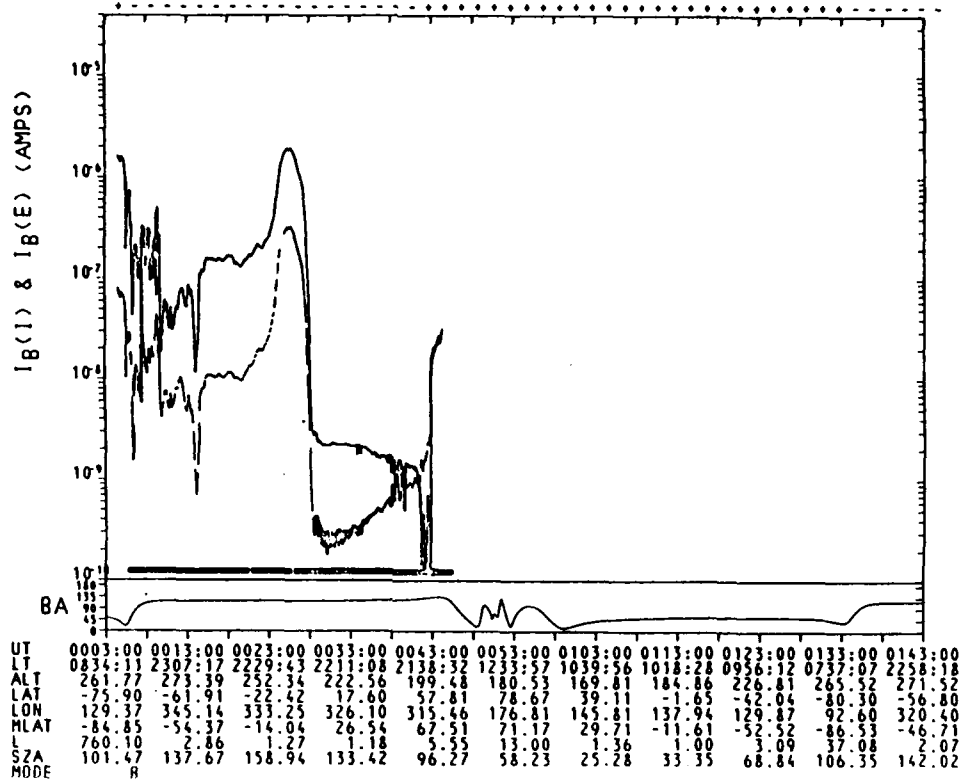
07/19/78

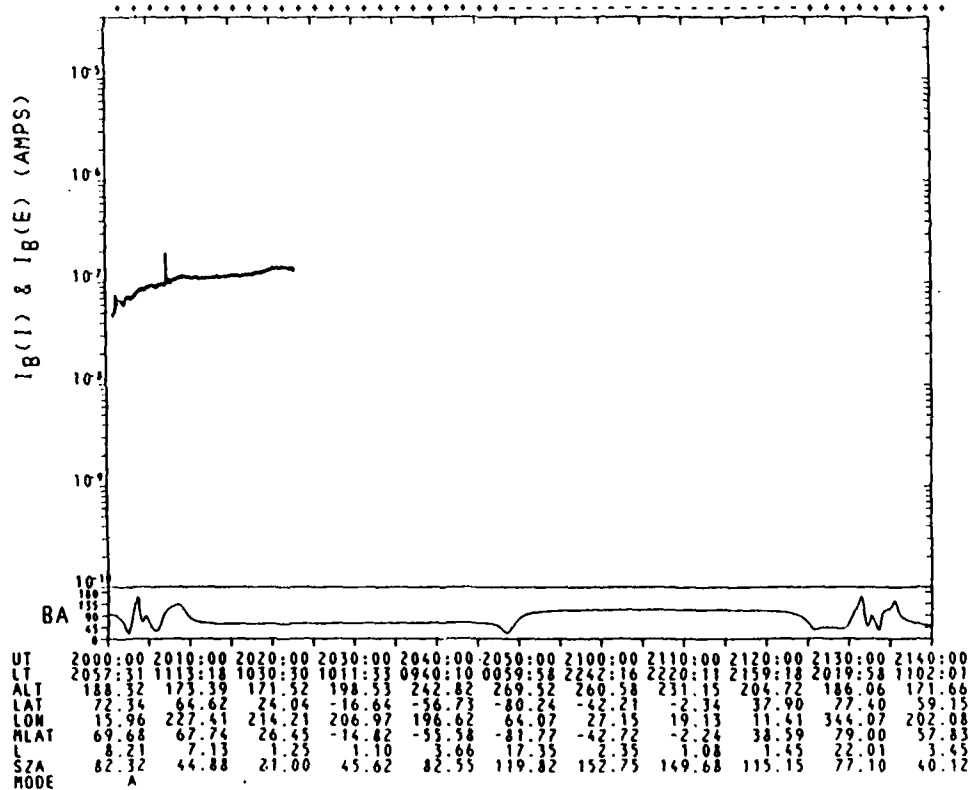
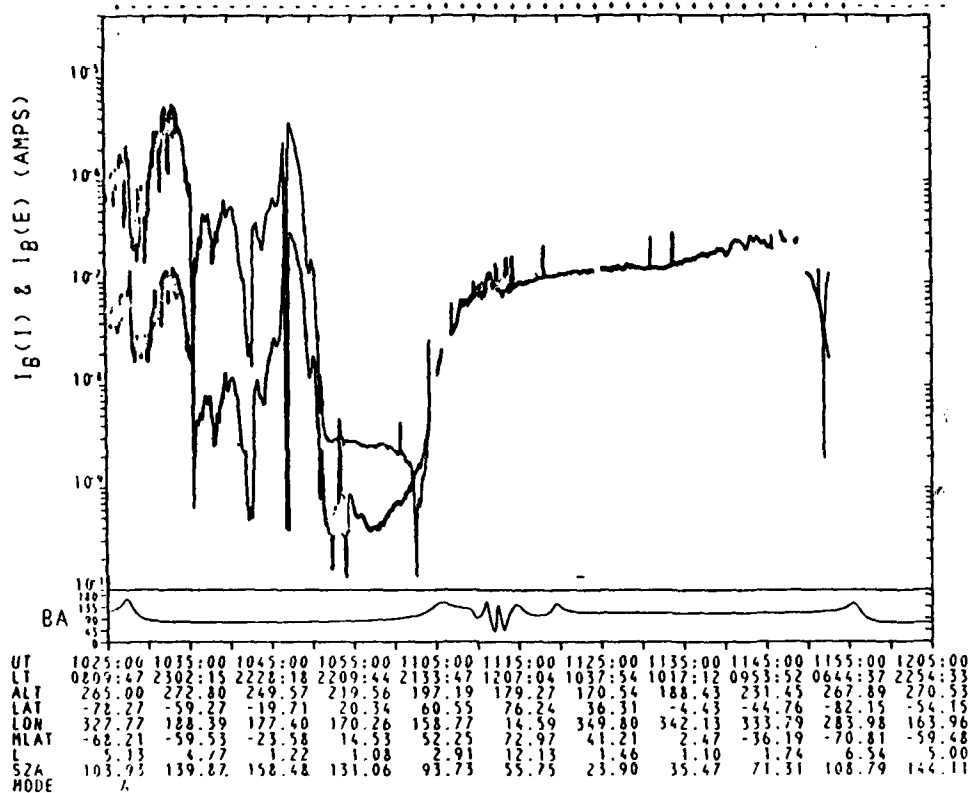
REV 2033

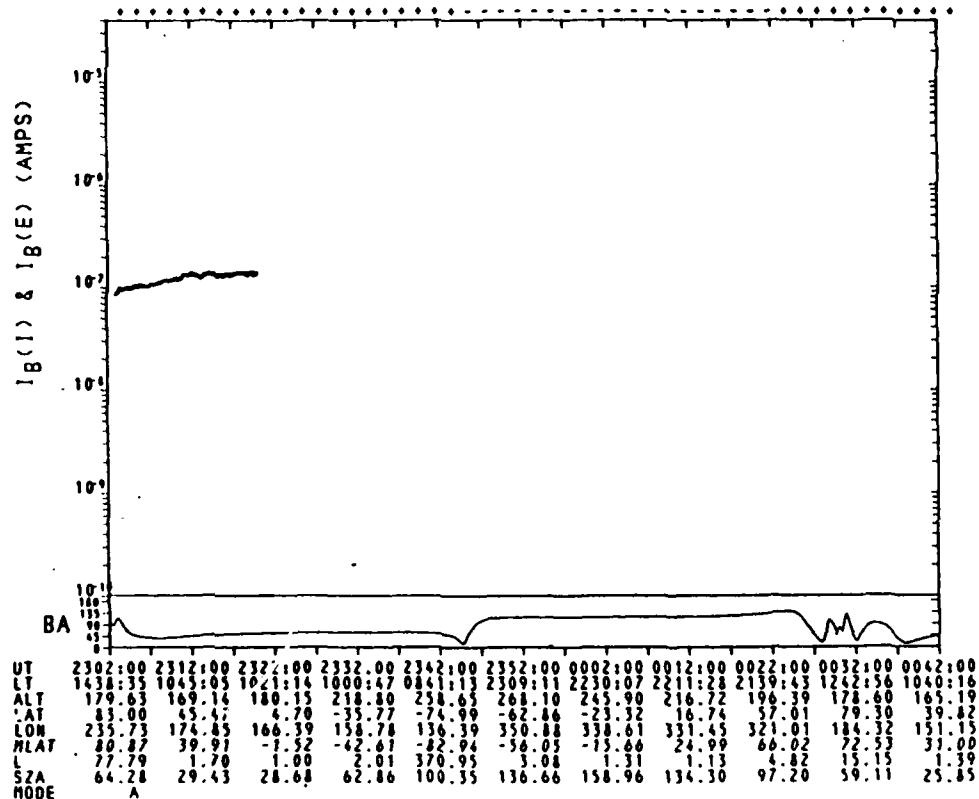
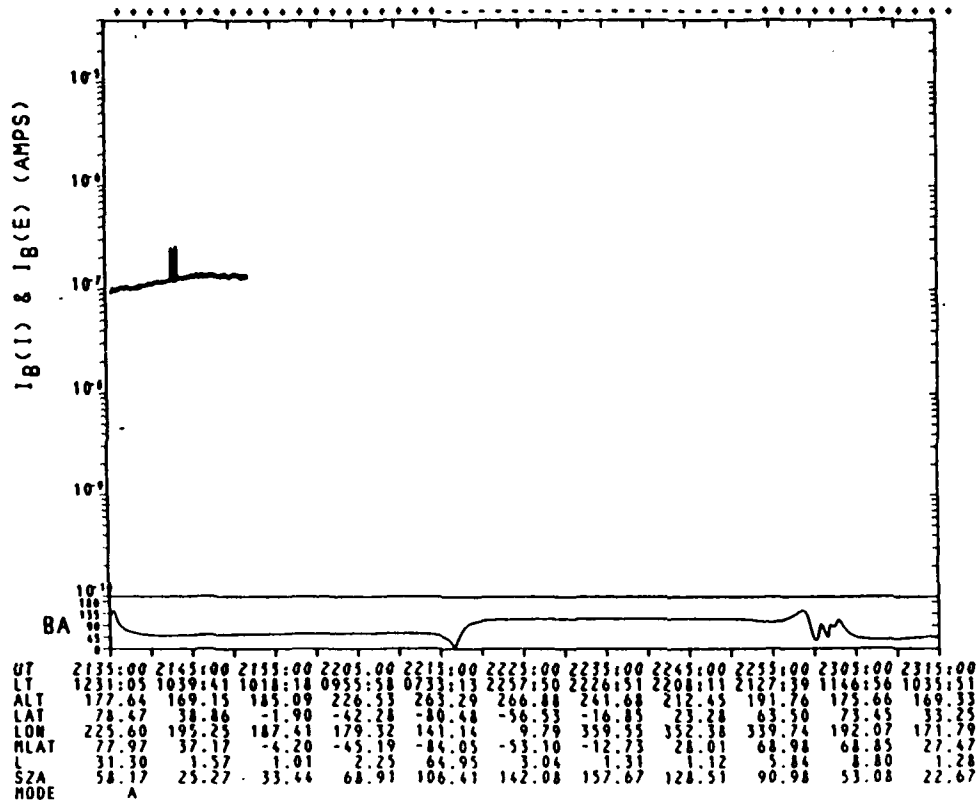
FORMAT C

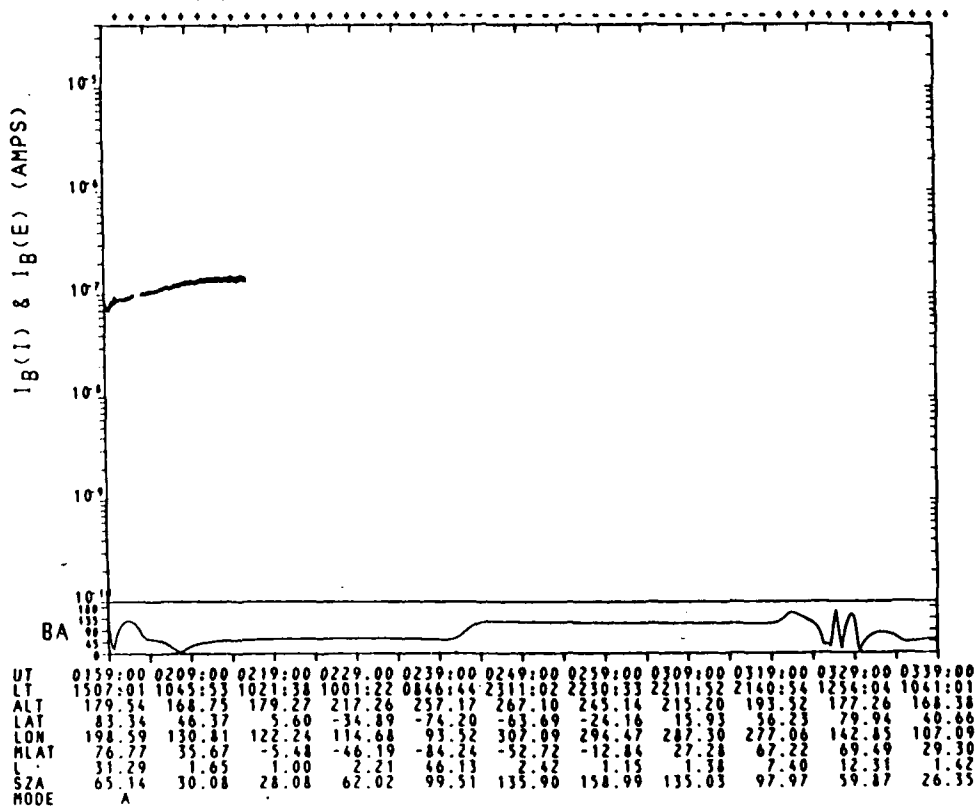
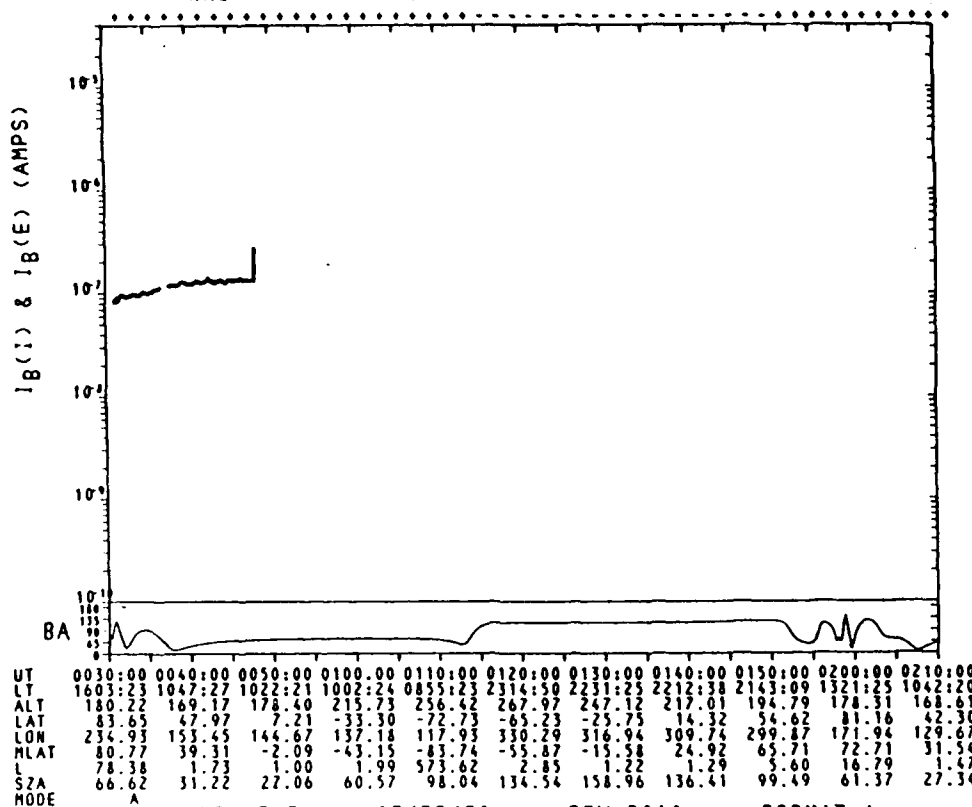




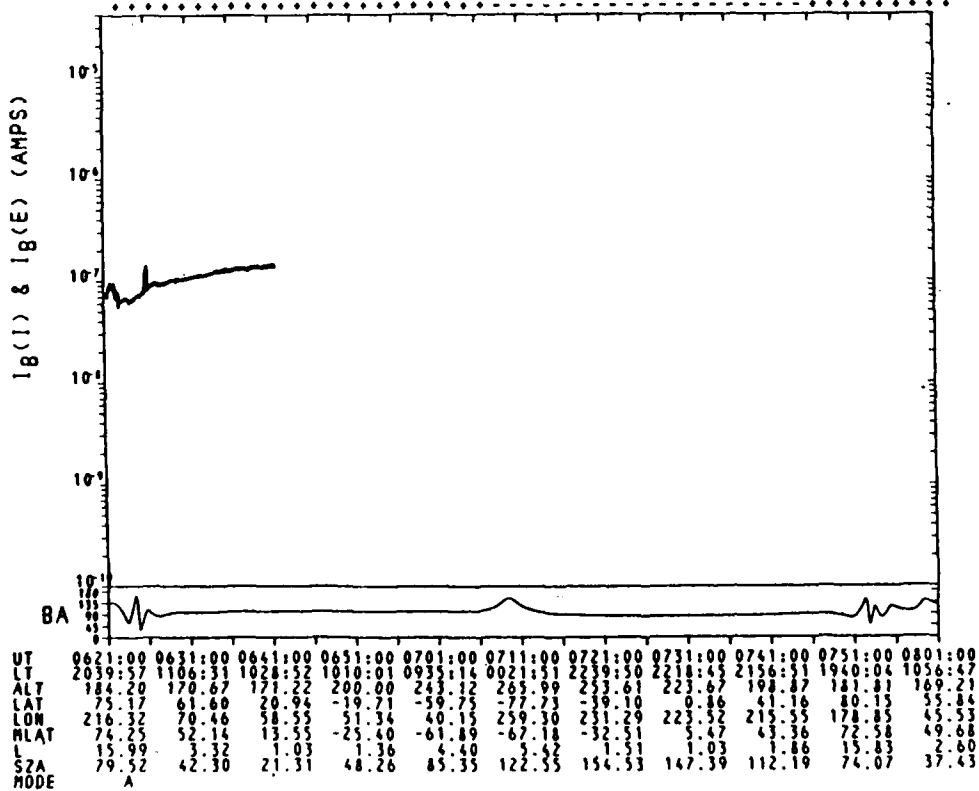
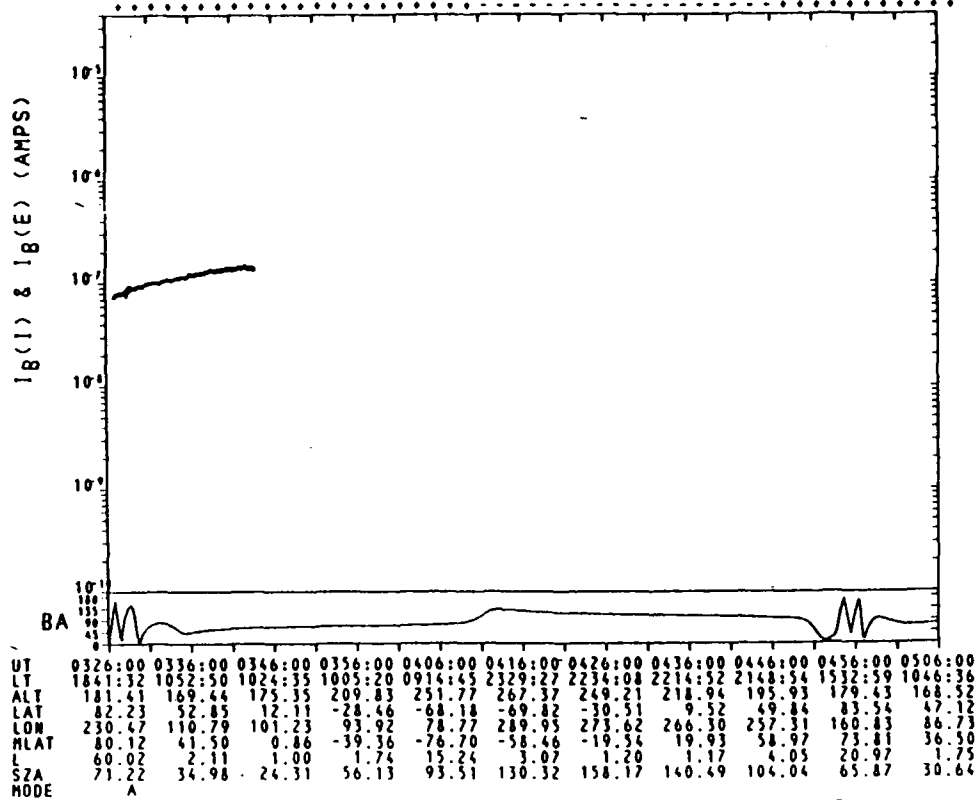










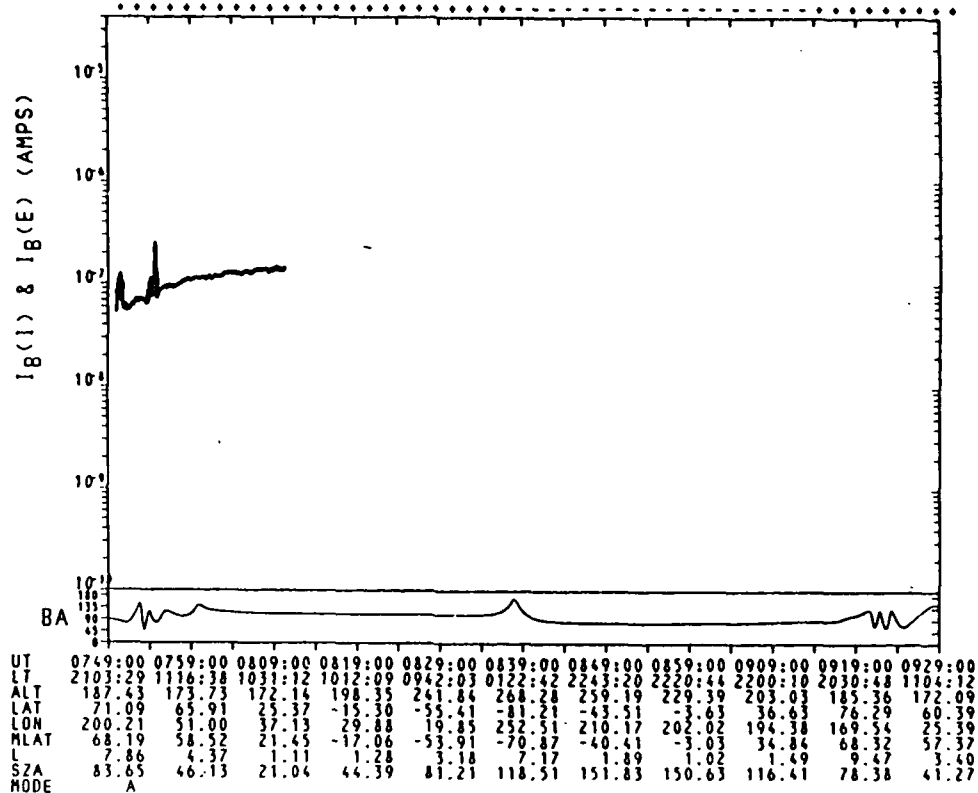


NRL 747

07/22/78

REV 2072

FORMAT A

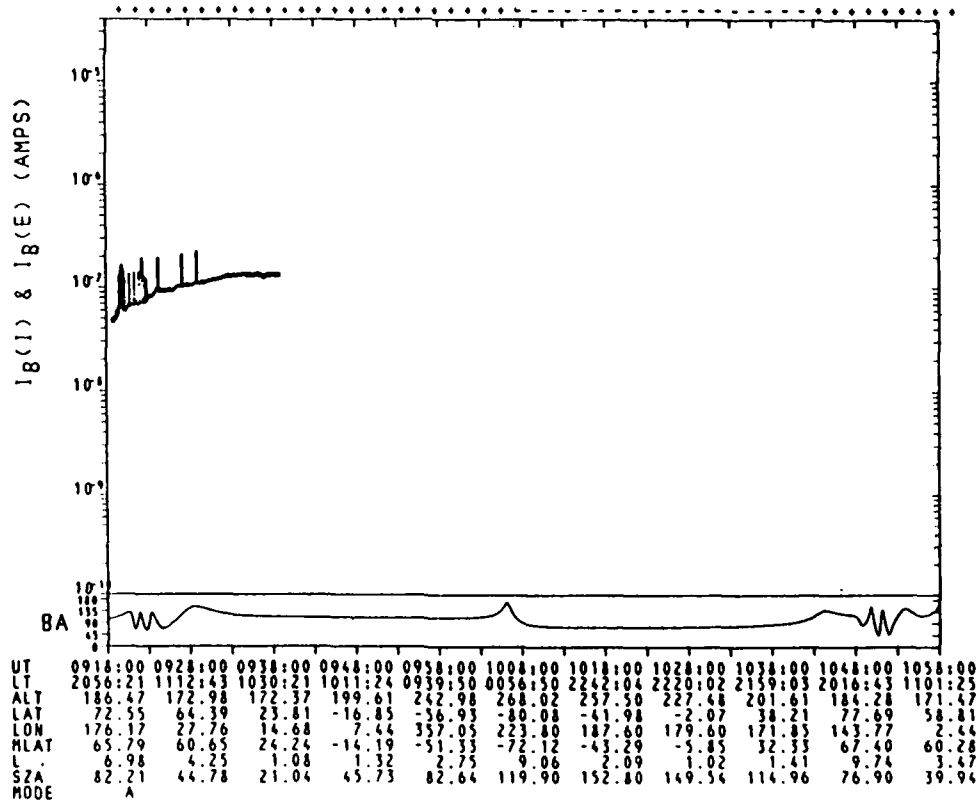


NRL 747

07/22/78

REV 2073

FORMAT A

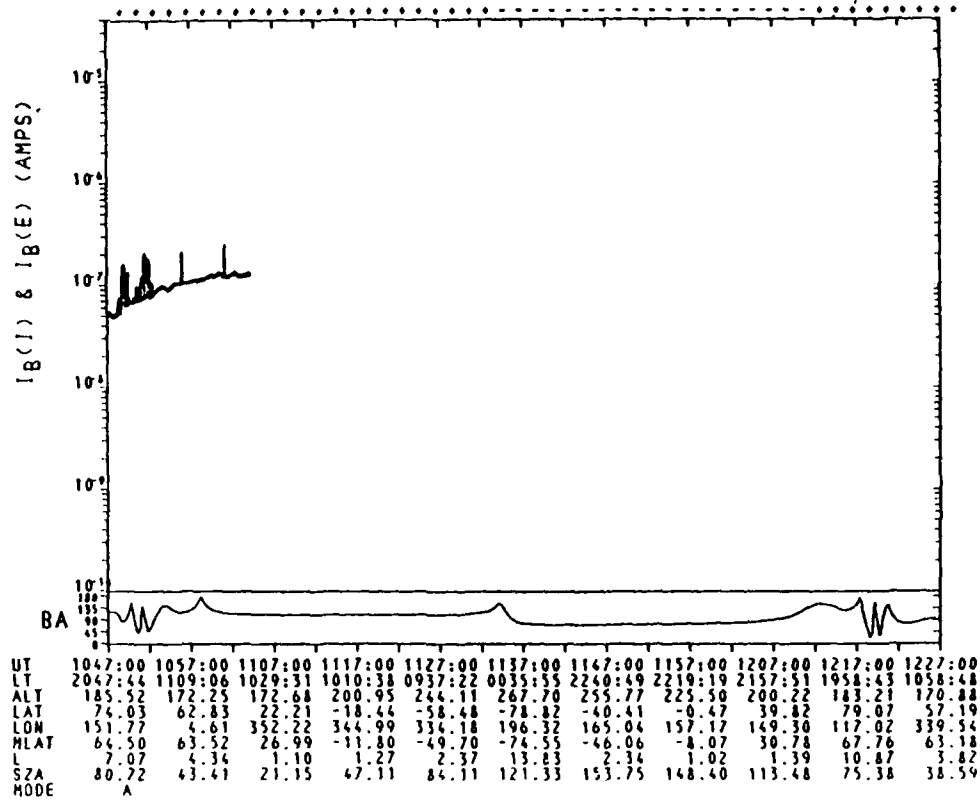


NRL 747

07/22/78

REV 2074

FORMAT A

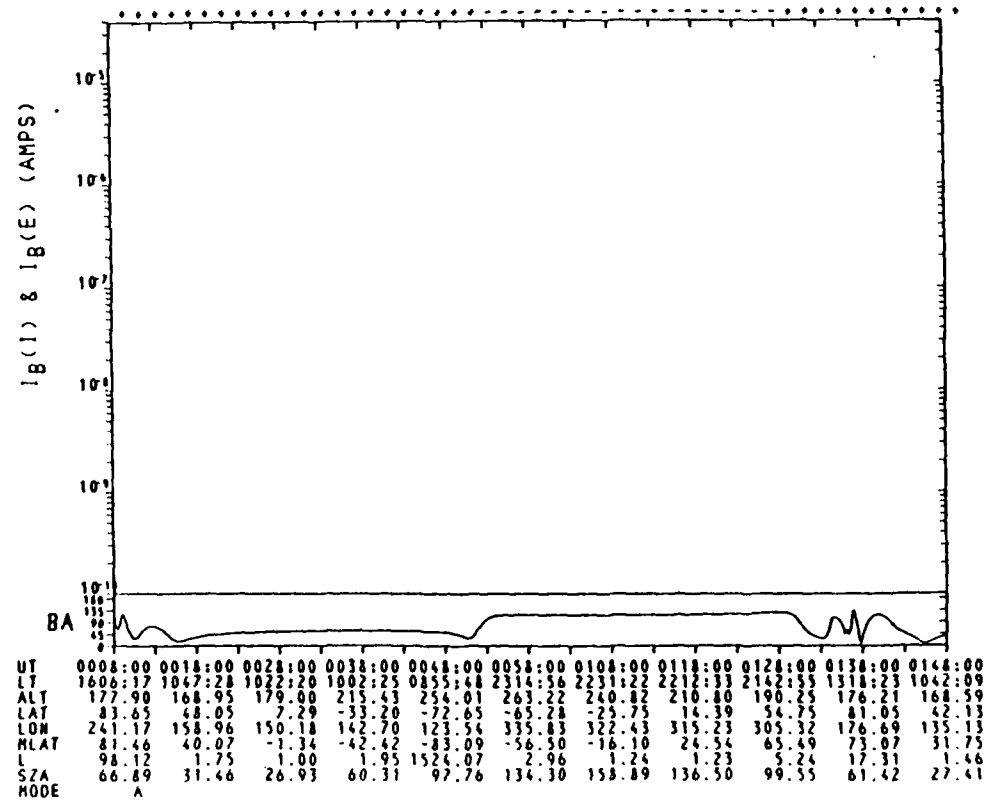


NRL 747

07/23/78

REV 2083

FORMAT A



NRL 747

07/23/78

REV 2084

FORMAT A

 $I_B(I) \text{ \& } I_B(E) \text{ (AMPS)}$ 

BA

UT	0137:00	0147:00	0157:00	0207:00	0217:00	0227:00	0237:00	0247:00	0257:00	0307:00	0317:00
LT	1501:46	1045:41	1021:30	1001:14	0845:49	2310:35	2230:22	2211:40	2140:18	1248:19	1040:39
ALT	177.16	168.59	179.97	217.08	254.75	-262.14	238.62	208.87	188.99	175.23	168.42
LAT	83.29	46.20	5.45	-35.02	-74.33	-63.52	-23.92	16.24	56.60	79.62	40.25
LOM	202.78	136.26	127.72	120.15	98.80	312.49	299.94	292.76	282.42	146.92	112.51
MLAT	77.18	35.88	-5.34	-46.15	-85.05	-52.82	-12.74	27.58	67.84	69.43	28.91
L	33.45	1.63	1.00	2.21	65.52	2.45	1.15	1.40	7.59	12.04	1.40
SZA	65.19	30.14	28.09	61.98	99.45	135.86	158.92	134.91	97.81	59.70	26.27
MODE	A										

NRL 747

07/23/78

REV 2085

FORMAT A

 $I_B(I) \text{ \& } I_B(E) \text{ (AMPS)}$ 

BA

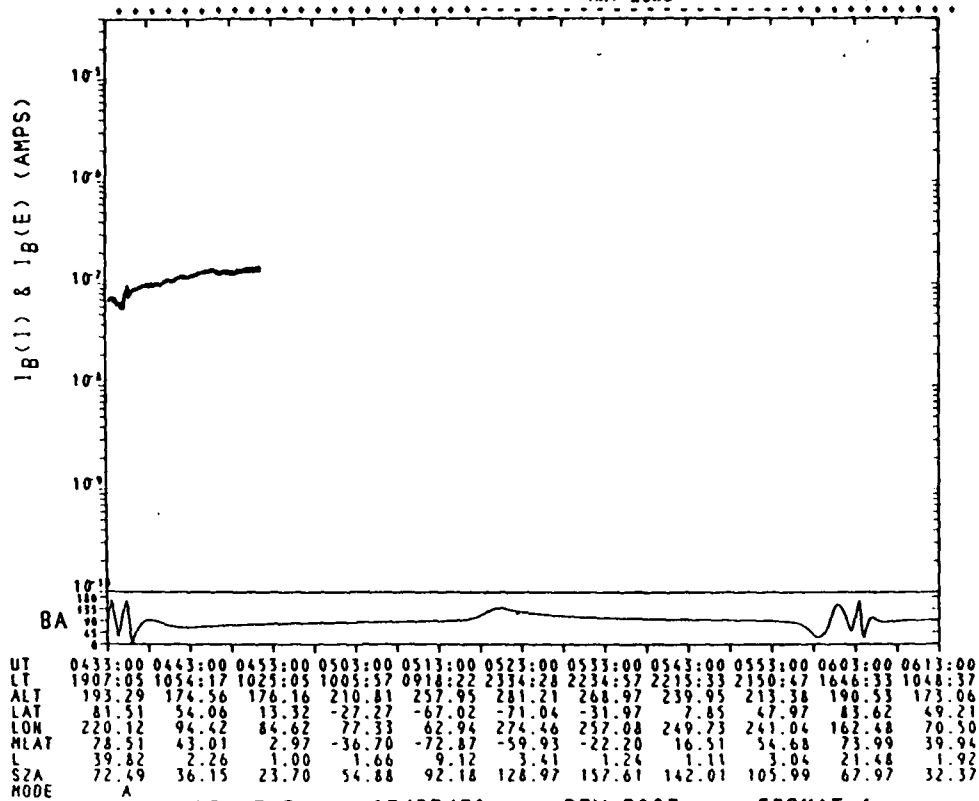
UT	0305:00	0315:00	0325:00	0335:00	0345:00	0355:00	0405:00	0415:00	0425:00	0435:00	0445:00
LT	1740:27	1050:20	1031:34	1004:03	0909:33	2322:46	2255:02	2214:05	2147:20	1451:32	1045:25
ALT	191.87	173.83	177.88	214.84	261.47	-281.90	-267.60	-238.31	-212.05	-189.17	-172.57
LAT	83.25	50.72	10.02	-30.54	-70.13	-67.98	-28.76	11.07	51.19	83.18	45.95
LOM	220.46	115.43	106.23	98.86	82.23	293.54	278.60	271.37	262.18	155.73	91.70
MLAT	79.10	39.47	-1.33	-41.68	-78.99	-56.64	-17.59	21.85	60.90	73.20	35.04
L	49.22	1.94	1.00	-1.87	20.13	2.83	1.18	1.22	4.65	19.36	1.67
SZA	69.40	33.54	25.35	57.86	95.23	131.83	158.47	139.33	102.94	64.92	29.99
MODE	A										

NRL 747

07/23/78

REV 2086

FORMAT A

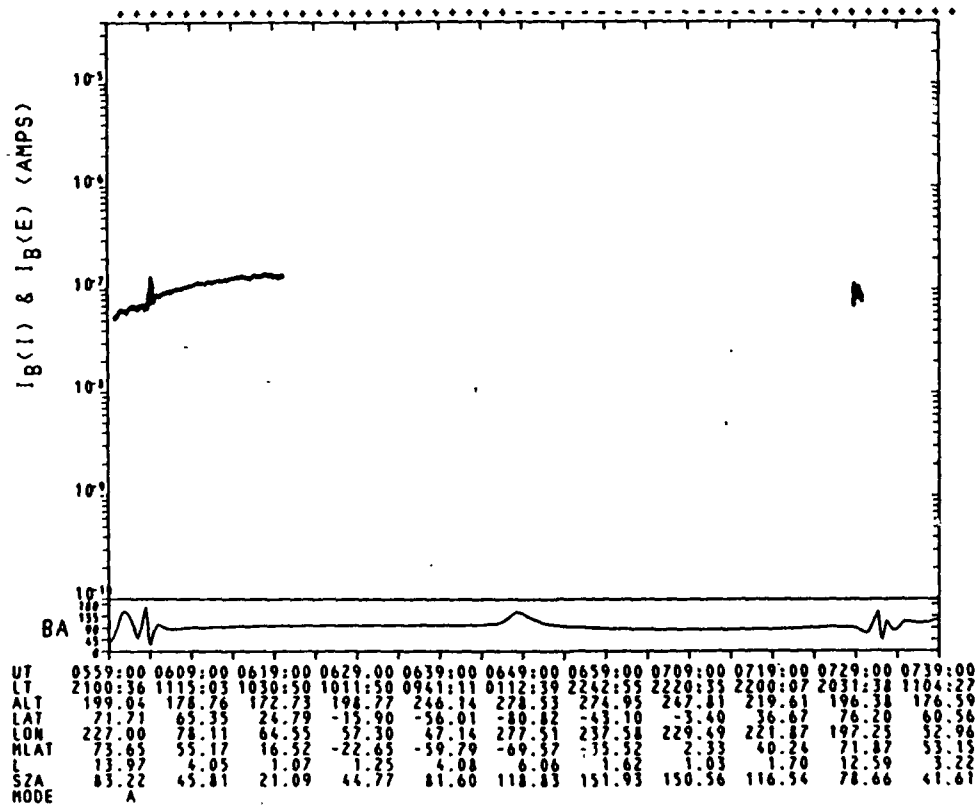


NRL 747

07/23/78

REV 2087

FORMAT A

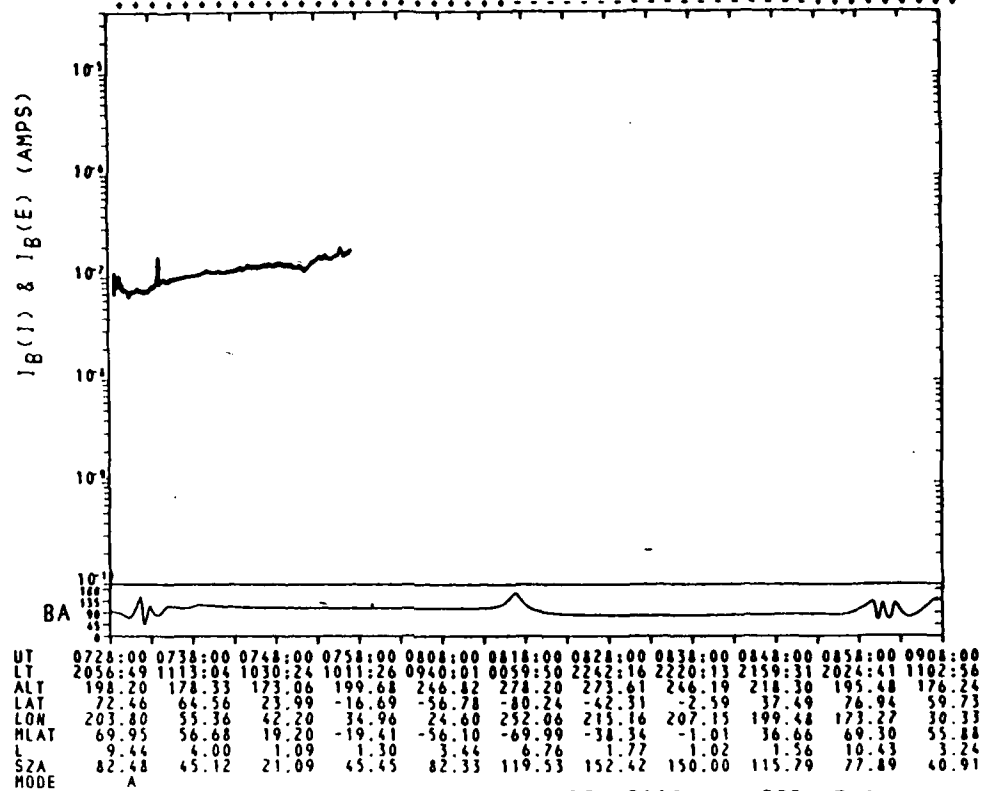


NRL 747

07/23/78

REV 2088

FORMAT A

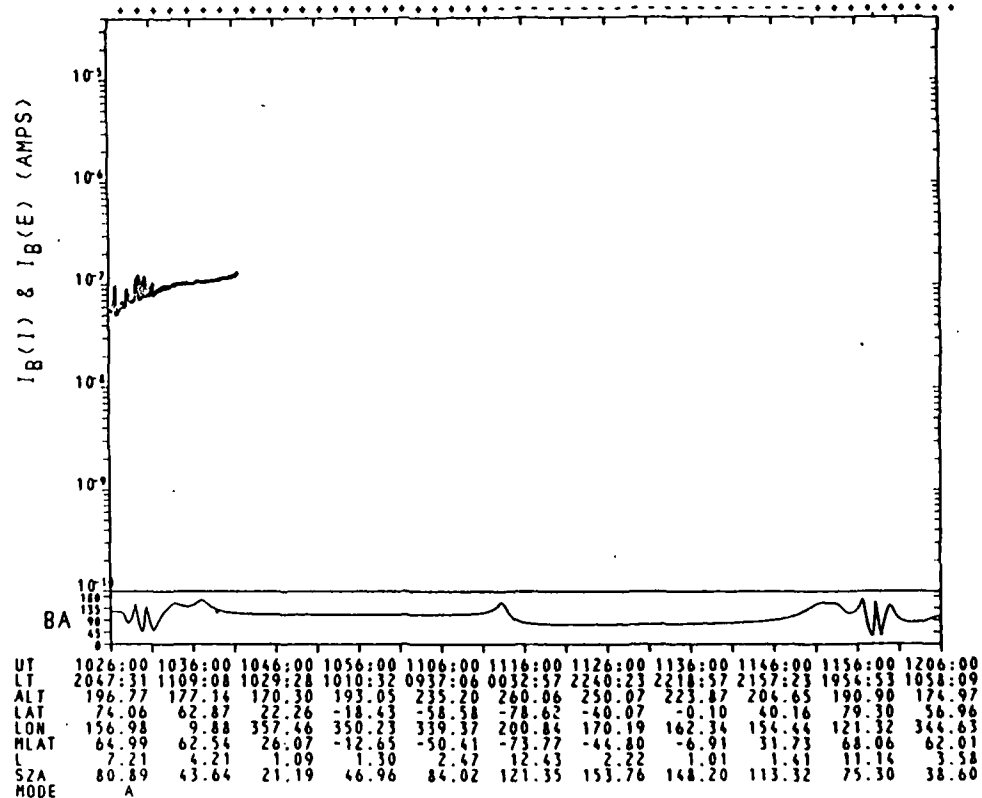


NRL 747

07/23/78

REV 2089

FORMAT A

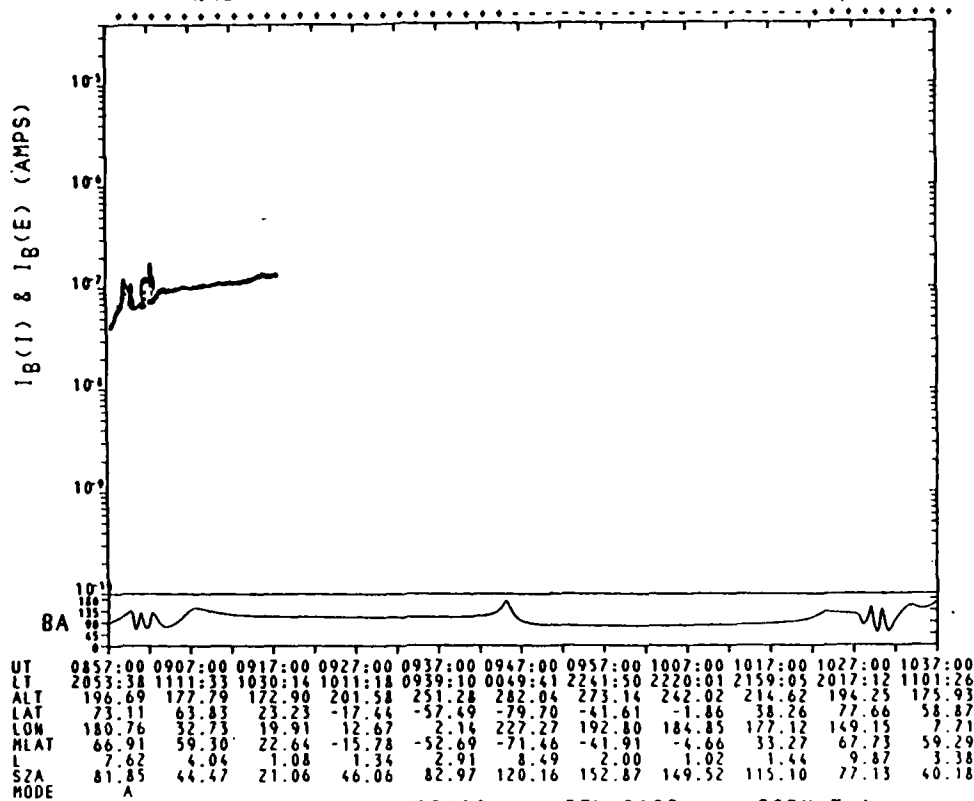


NRL 747

07/23/78

REV 2091

FORMAT A

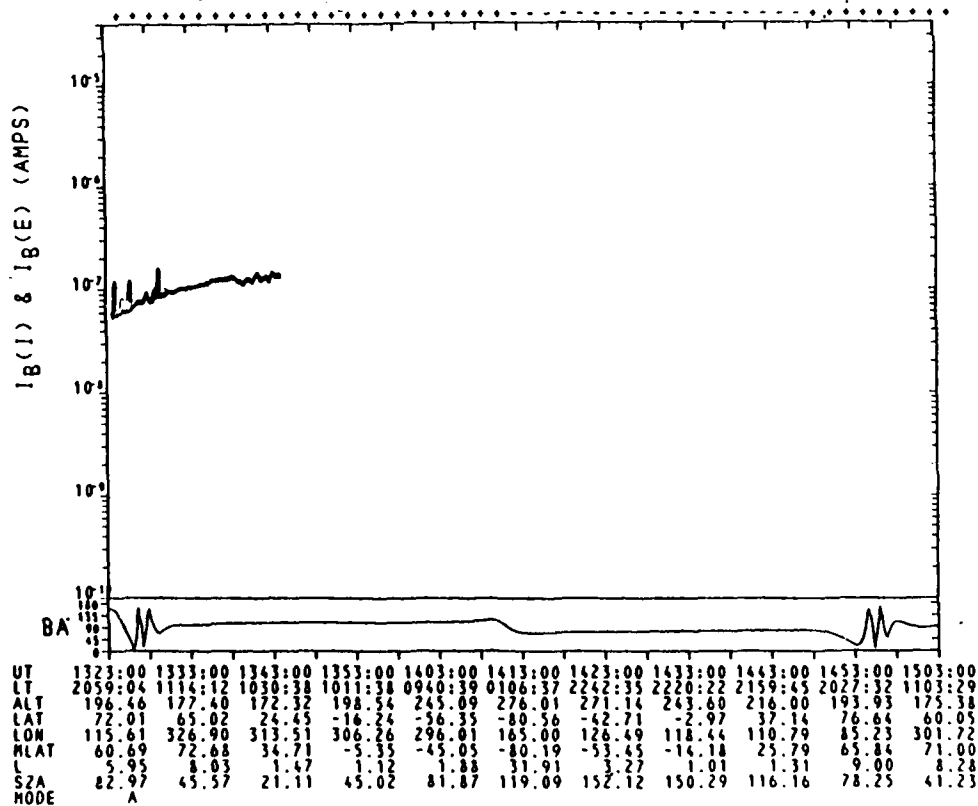


NRL 747

07/23/78

REV 2092

FORMAT A

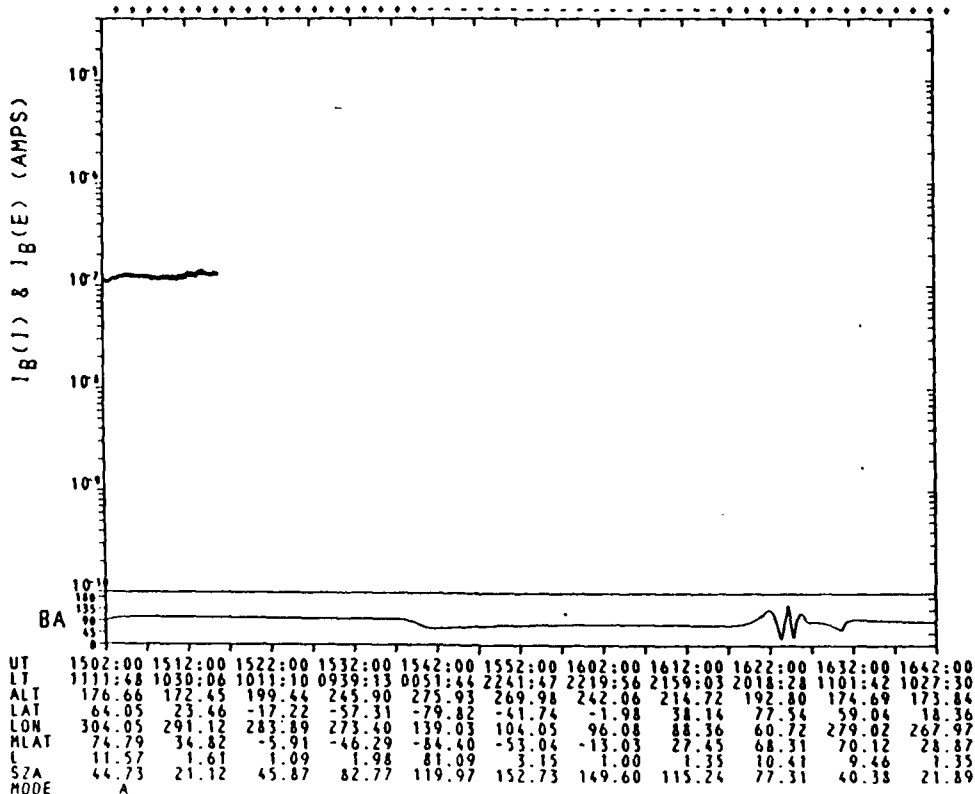


NRL 747

07/23/78

REV 2093

FORMAT A

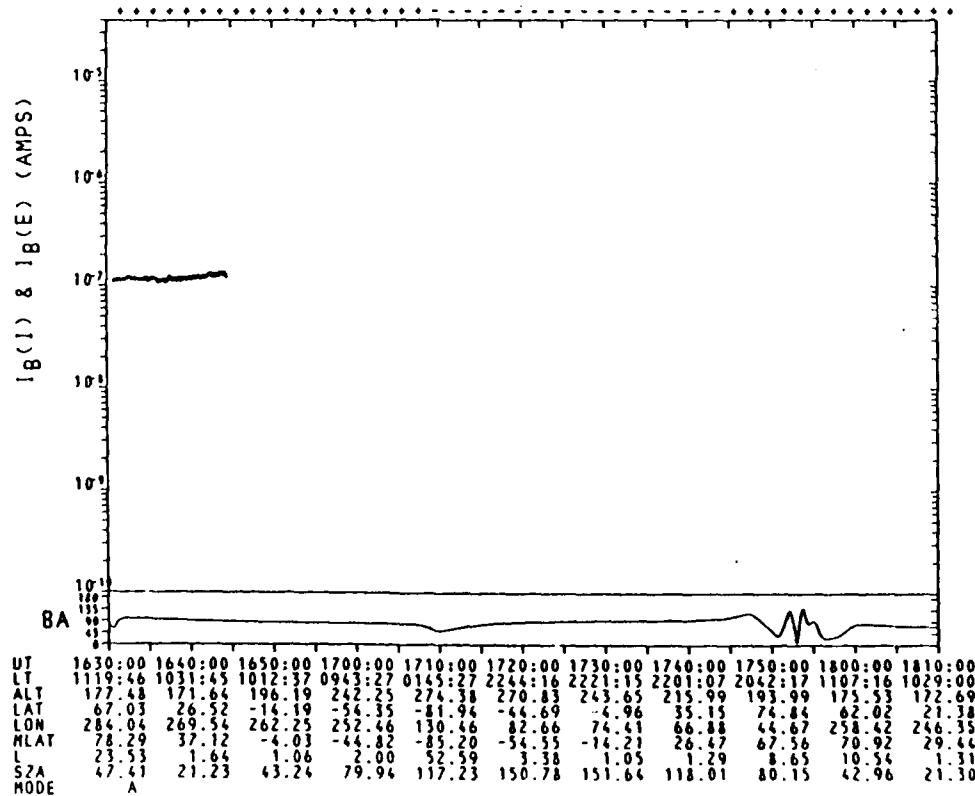


NRL 747

07/23/78

REV 2094

FORMAT A



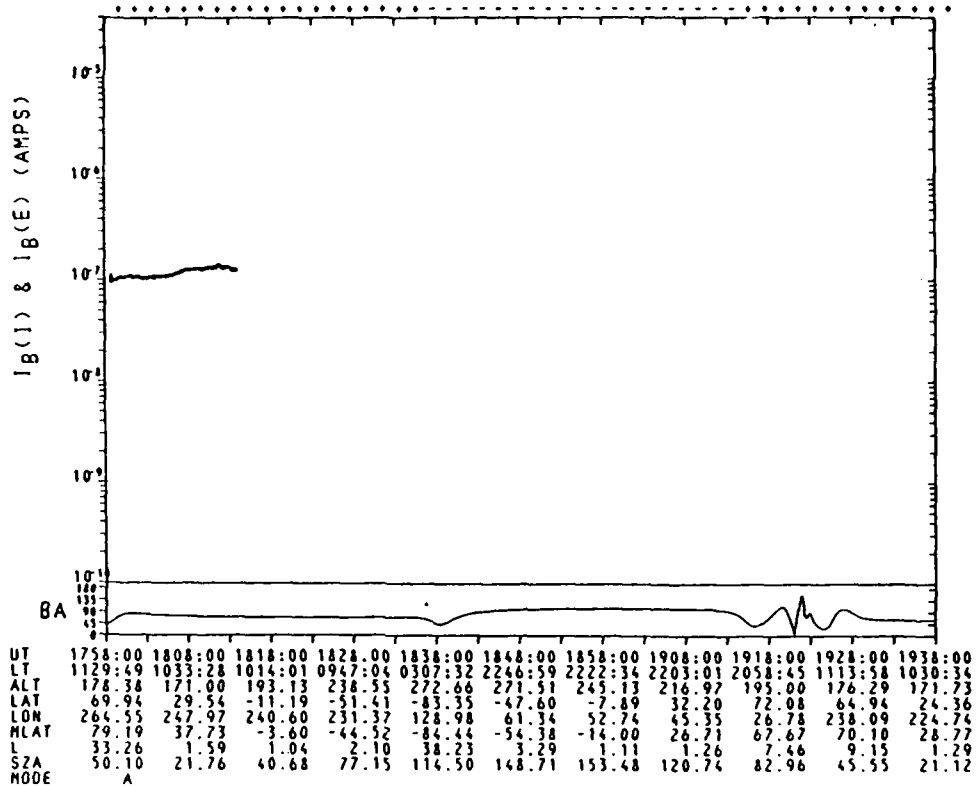


NRL 747

07/23/78

REV 2095

FORMAT A

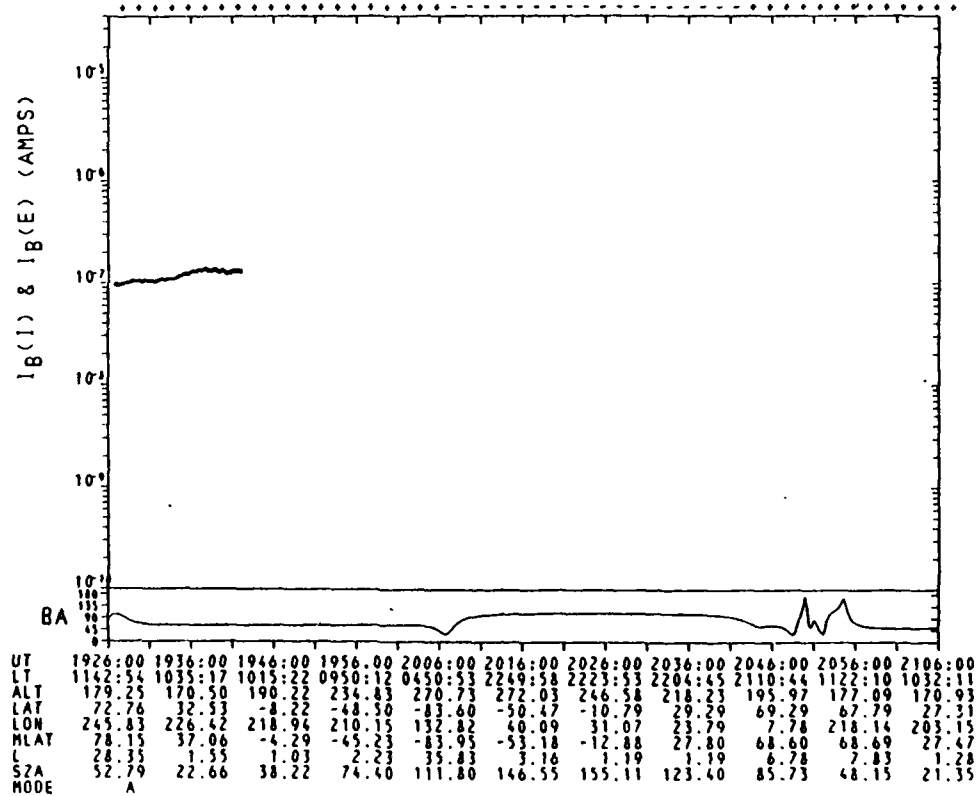


NRL 747

07/23/78

REV 2096

FORMAT A

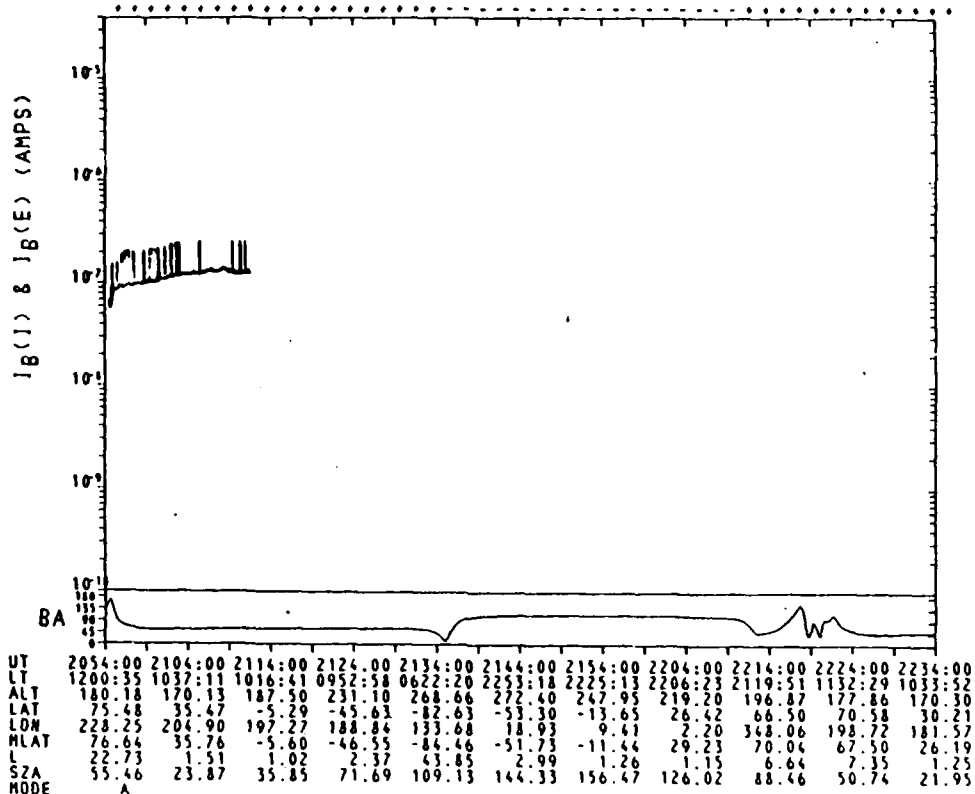


NRL 747

07/23/78

REV 2097

FORMAT A

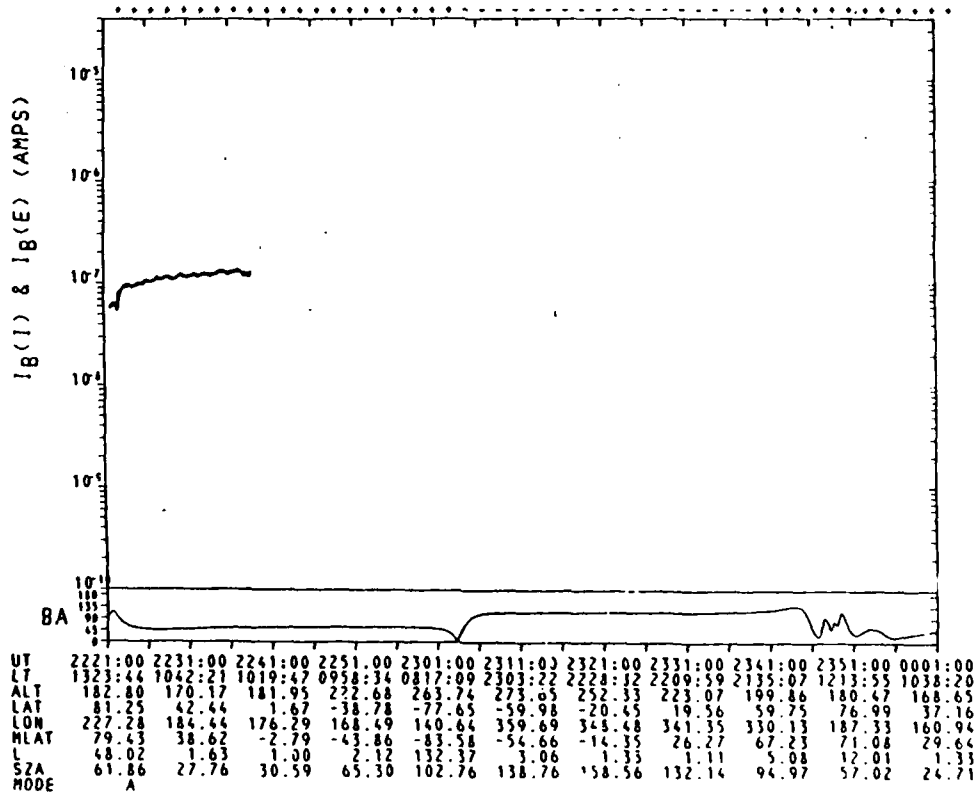


NRL 747

07/23/78

REV 2098

FORMAT A

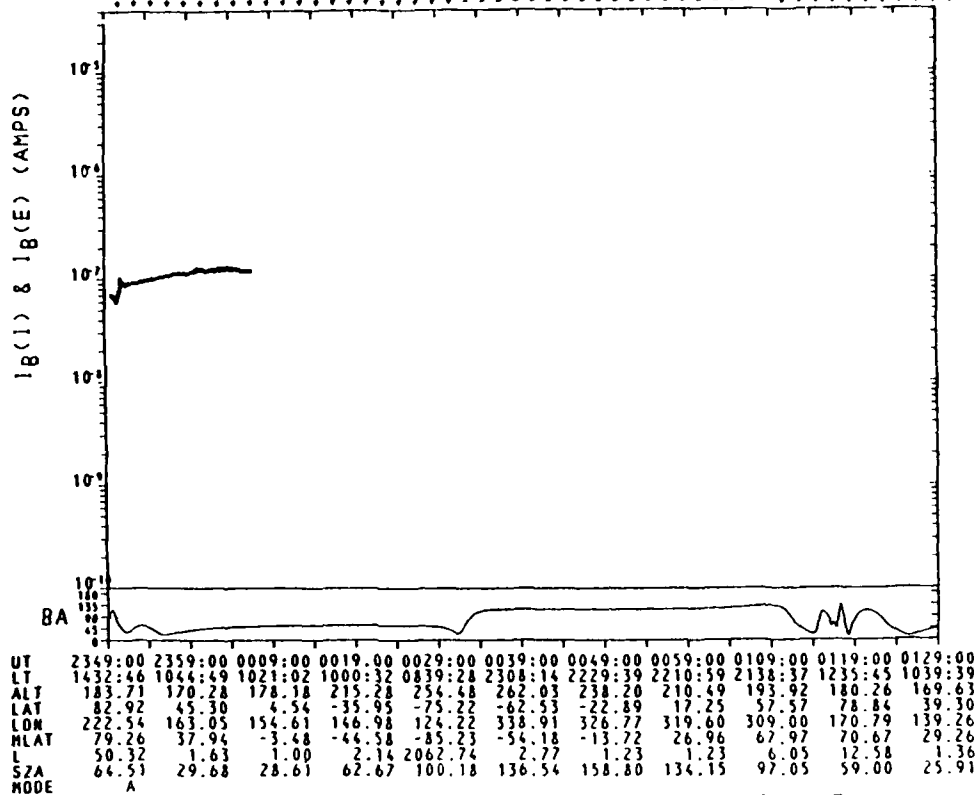


NRL 747

07/23/78

REV 2099

FORMAT A

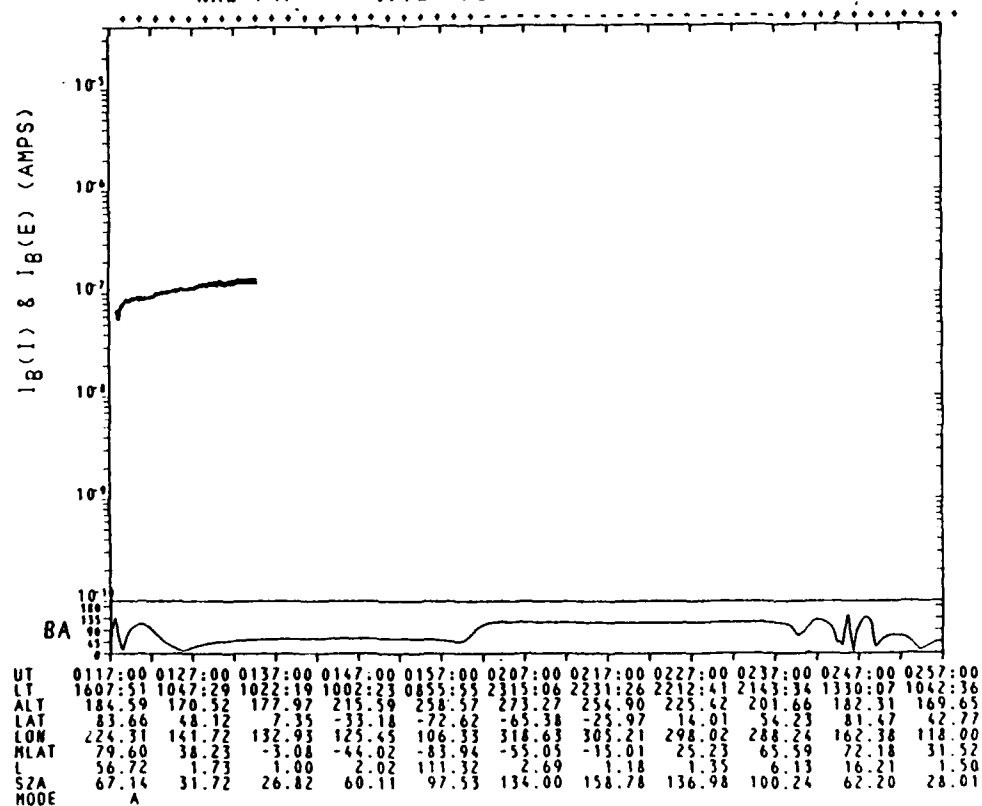


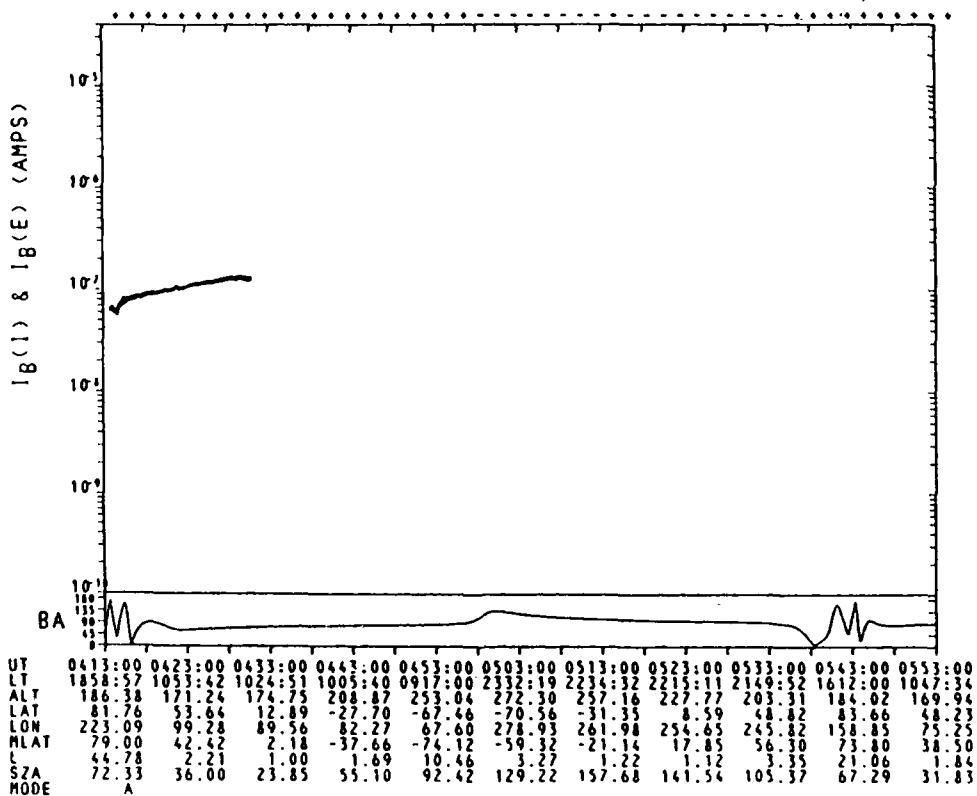
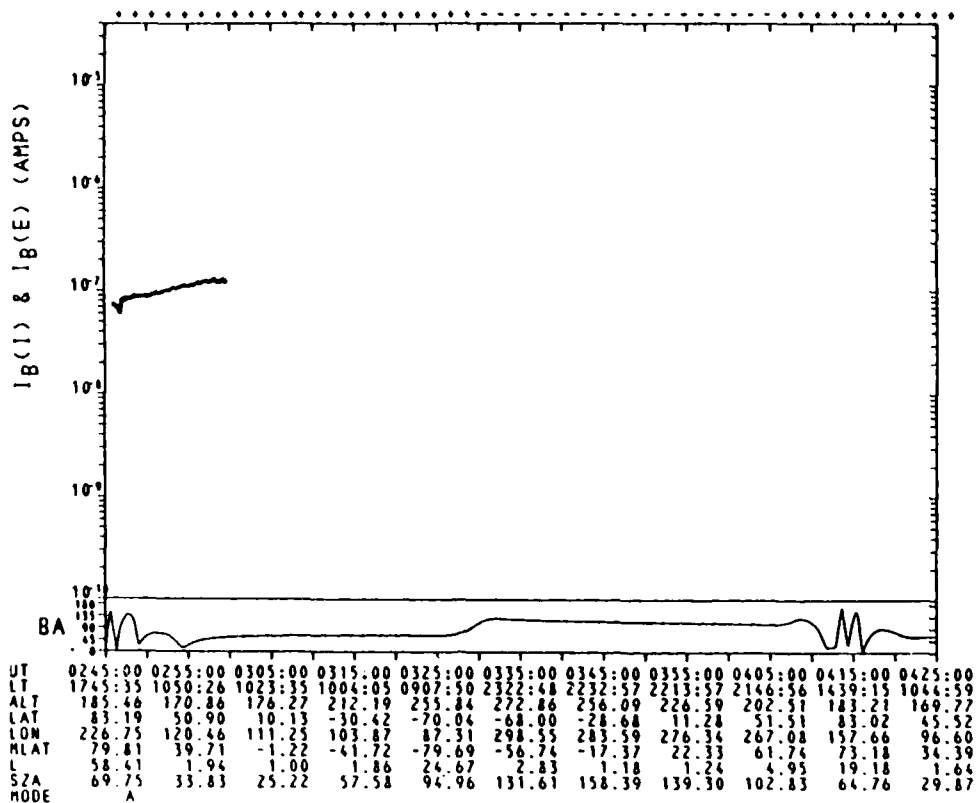
NRL 747

07/24/78

REV 2100

FORMAT A



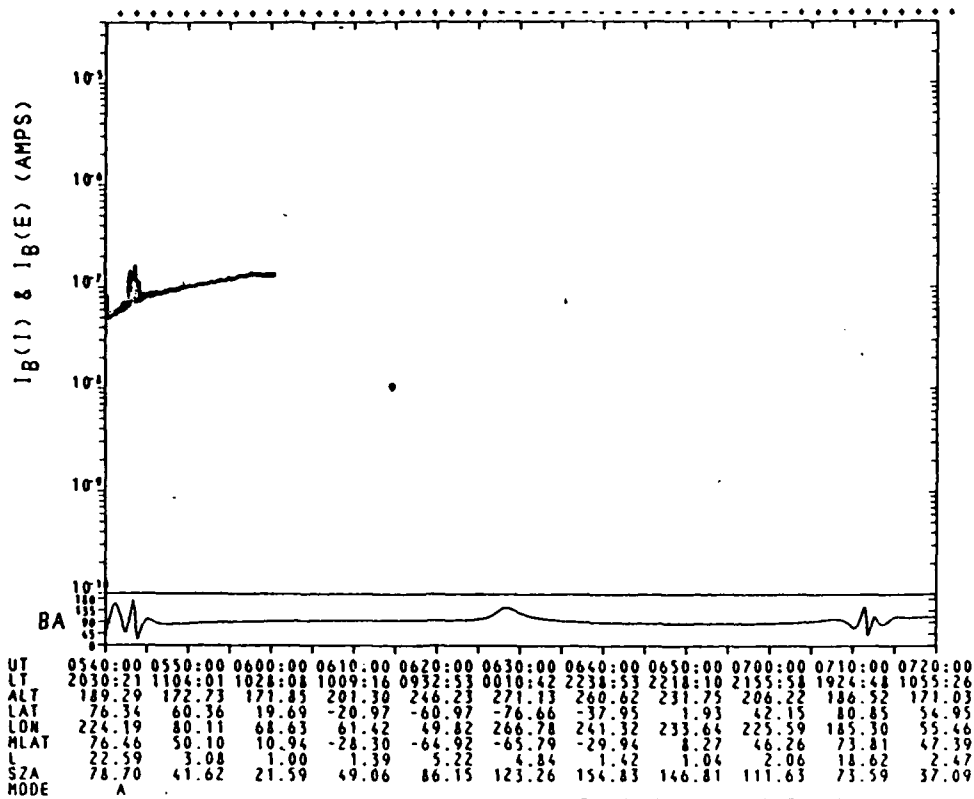


NRL 747

07/24/78

REV 2103

FORMAT A

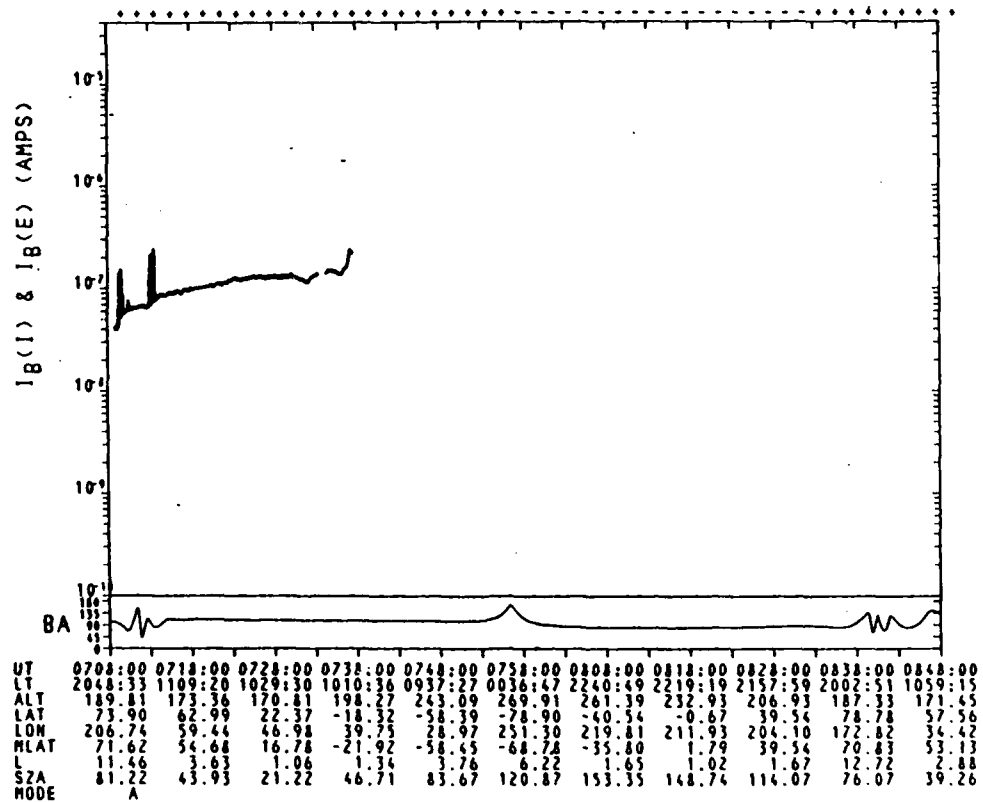


NRL 747

07/24/78

REV 2104

FORMAT A



NRL 747

07/24/78

REV 2105

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

UT	0837:00	0847:00	0857:00	0907:00	0917:00	0927:00	0937:00	0947:00	0957:00	1007:00	1017:00
LT	2056:08	1112:37	1030:15	1011:18	0939:45	0057:16	2242:02	2220:02	2159:11	2020:27	1102:01
ALT	192.64	175.76	172.87	200.06	245.61	274.02	266.51	237.66	210.50	190.12	173.93
LAT	72.58	64.40	23.82	-16.85	-56.93	-80.11	-42.09	-2.29	37.89	77.34	59.24
LOX	186.39	38.01	24.92	17.68	7.29	234.17	197.86	189.86	182.15	154.97	12.86
MLAT	67.25	58.98	22.25	-16.17	-53.04	-71.18	-41.38	-4.11	33.78	67.88	58.64
L	7.64	4.12	1.08	1.33	3.00	7.98	1.96	1.02	1.46	0.76	3.36
SZA	82.57	45.19	21.16	45.42	82.26	119.47	152.37	149.90	115.61	77.66	40.70
MODE	A										

NRL 747

07/24/78

REV 2106

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

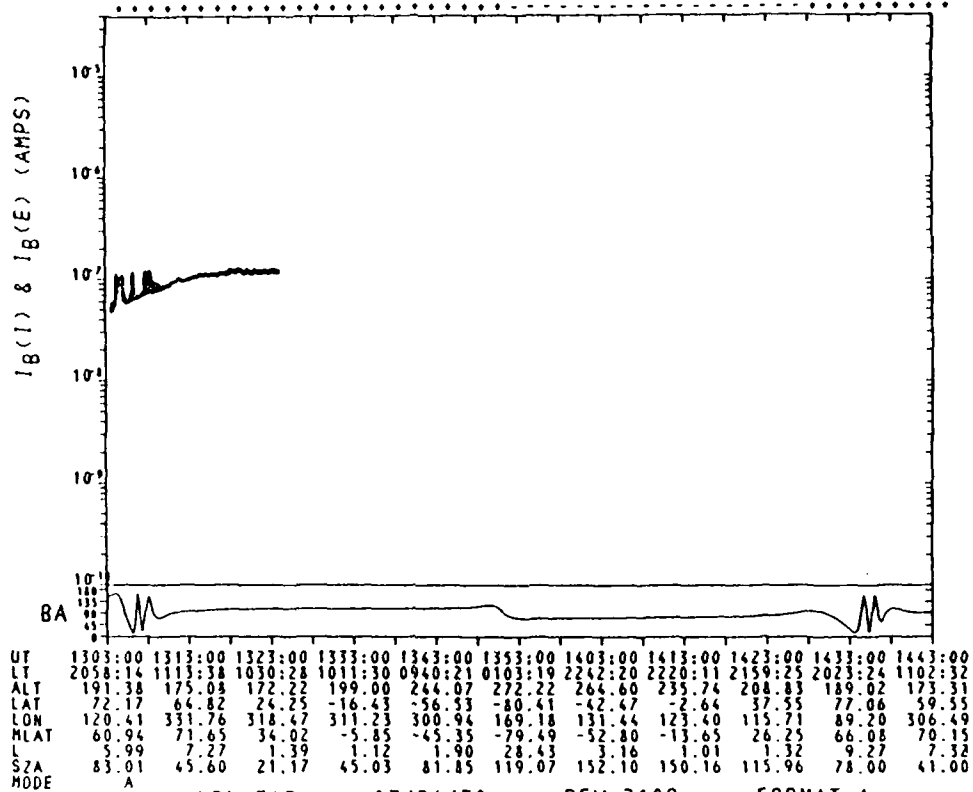
UT	1006:00	1016:00	1026:00	1036:00	1046:00	1056:00	1106:00	1116:00	1126:00	1136:00	1146:00
LT	2049:55	1109:53	1029:33	1010:33	0937:07	0032:04	2240:10	2218:46	2157:07	1952:02	1057:43
ALT	191.69	172.72	161.27	180.21	221.37	248.27	242.27	220.27	203.43	188.98	169.65
LAT	73.67	63.25	22.59	-16.22	-58.52	-78.57	-39.90	0.11	40.38	79.47	56.73
LOX	162.58	15.07	2.49	355.24	344.38	205.62	175.14	167.30	159.38	125.61	349.53
MLAT	65.19	61.90	25.43	-13.30	-51.00	-73.08	-43.70	-5.89	32.59	68.33	60.86
L	7.12	4.19	1.08	1.31	2.56	11.24	2.12	1.01	1.43	11.36	3.38
SZA	81.48	44.18	21.22	46.62	83.78	121.21	153.68	148.15	113.29	75.30	38.61
MODE	A										

NRL 747

07/24/78

REV 2108

FORMAT A

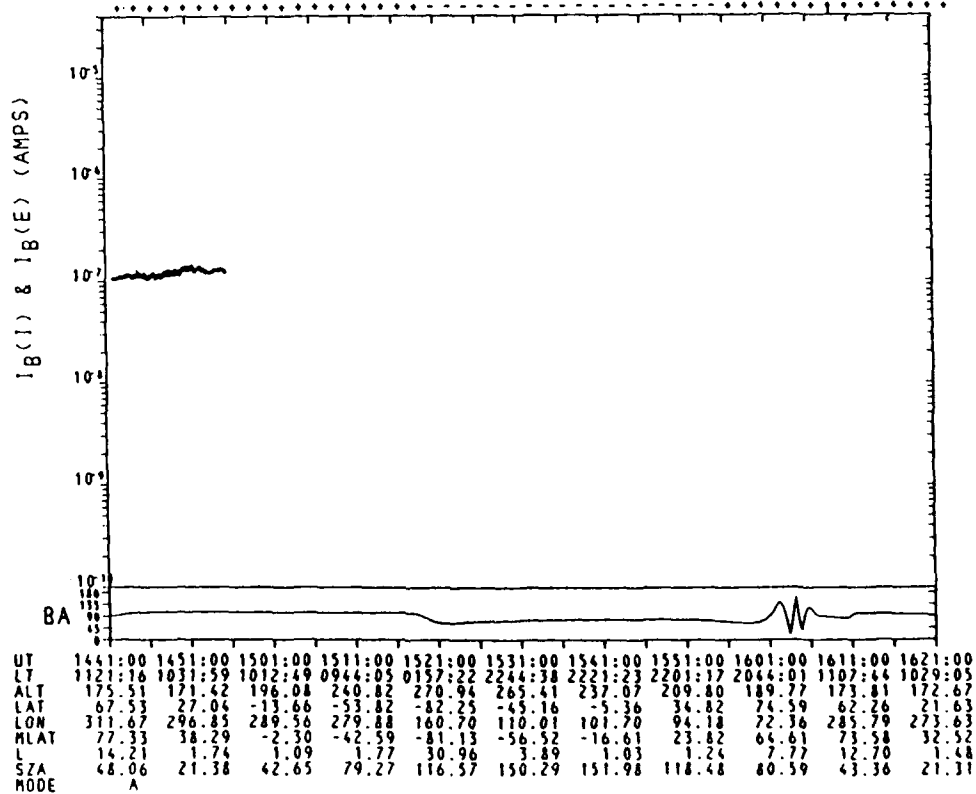


NRL 747

07/24/78

REV 2109

FORMAT A

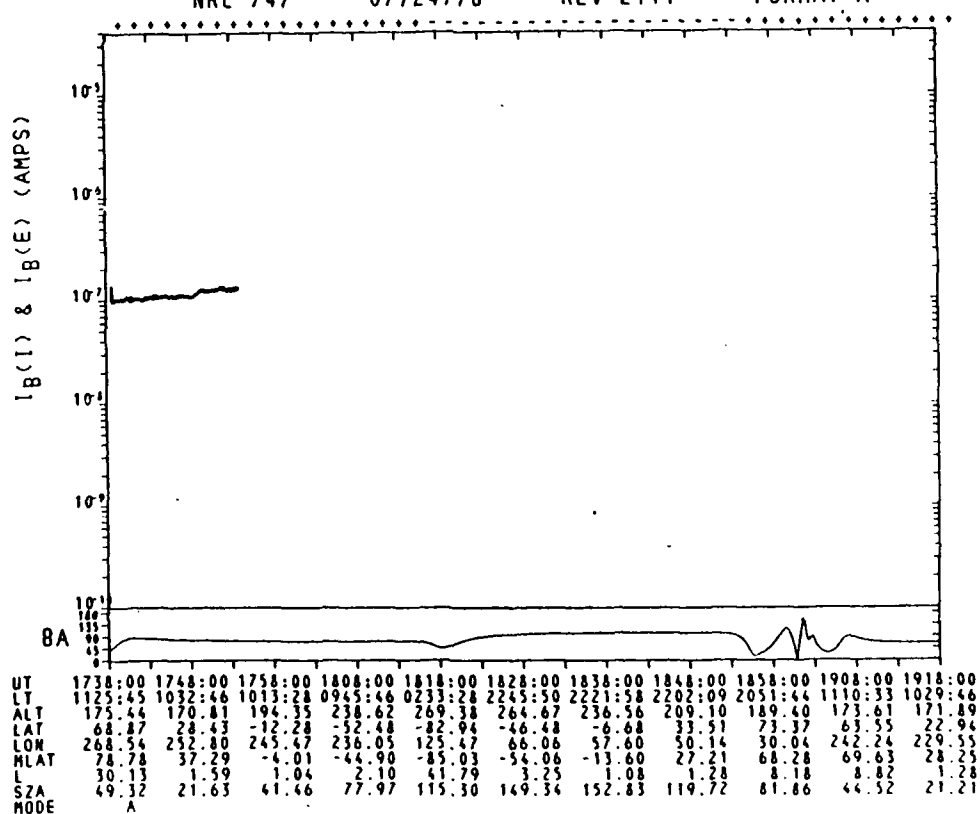
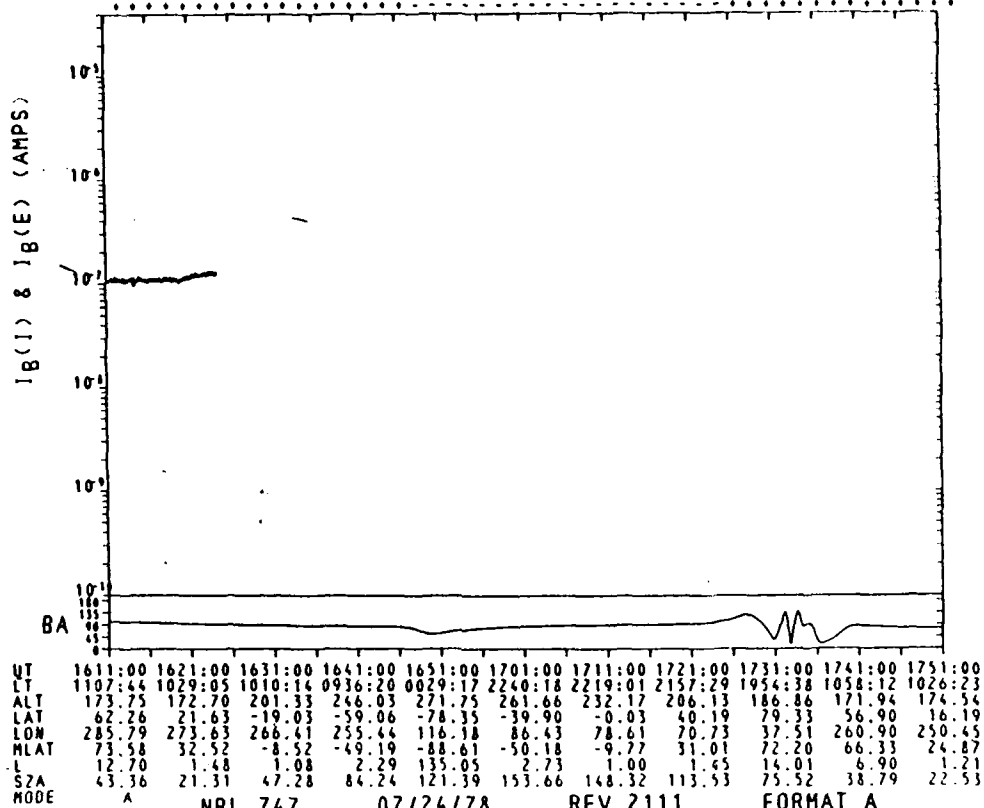


NRL 747

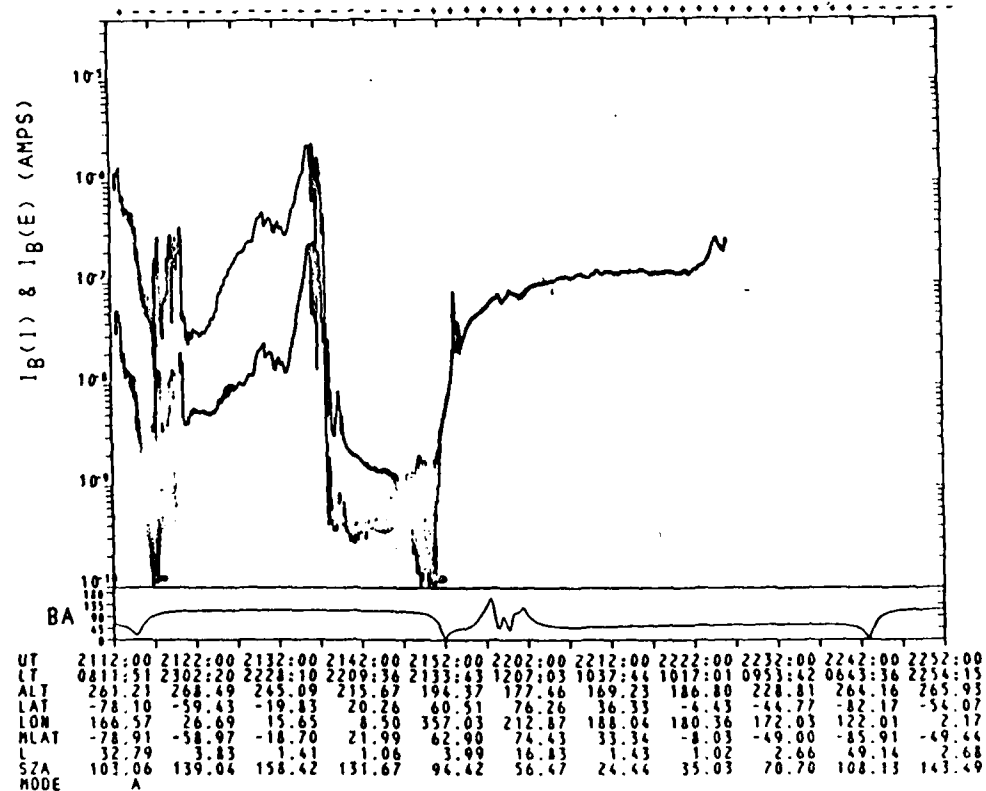
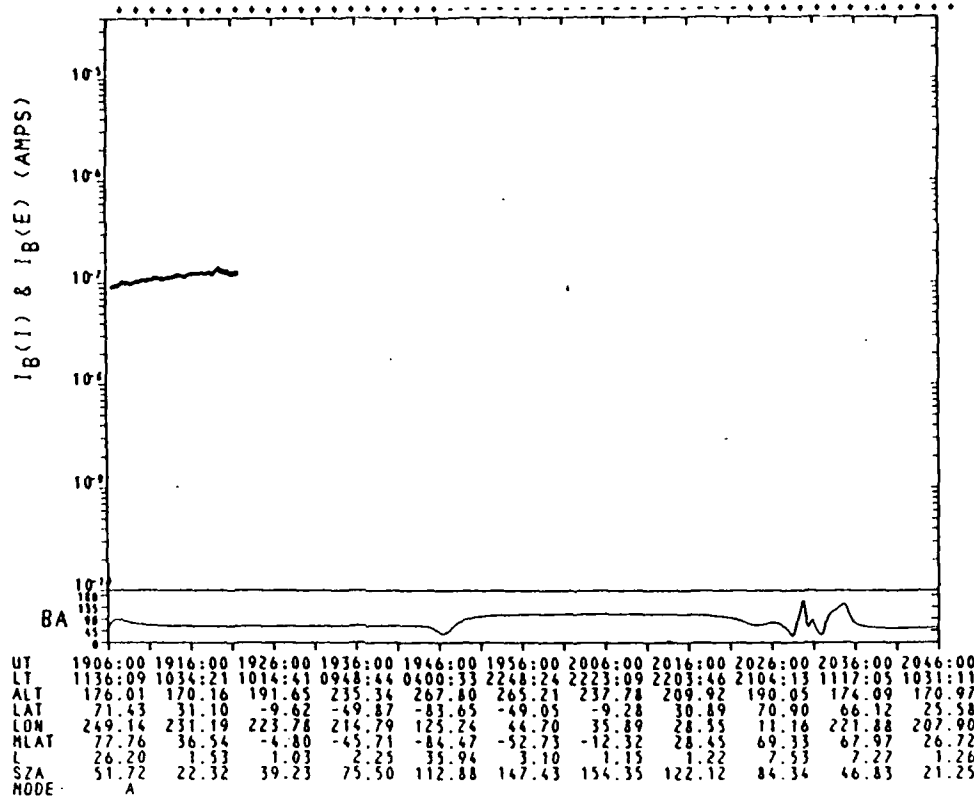
07/24/78

REV 2110

FORMAT A





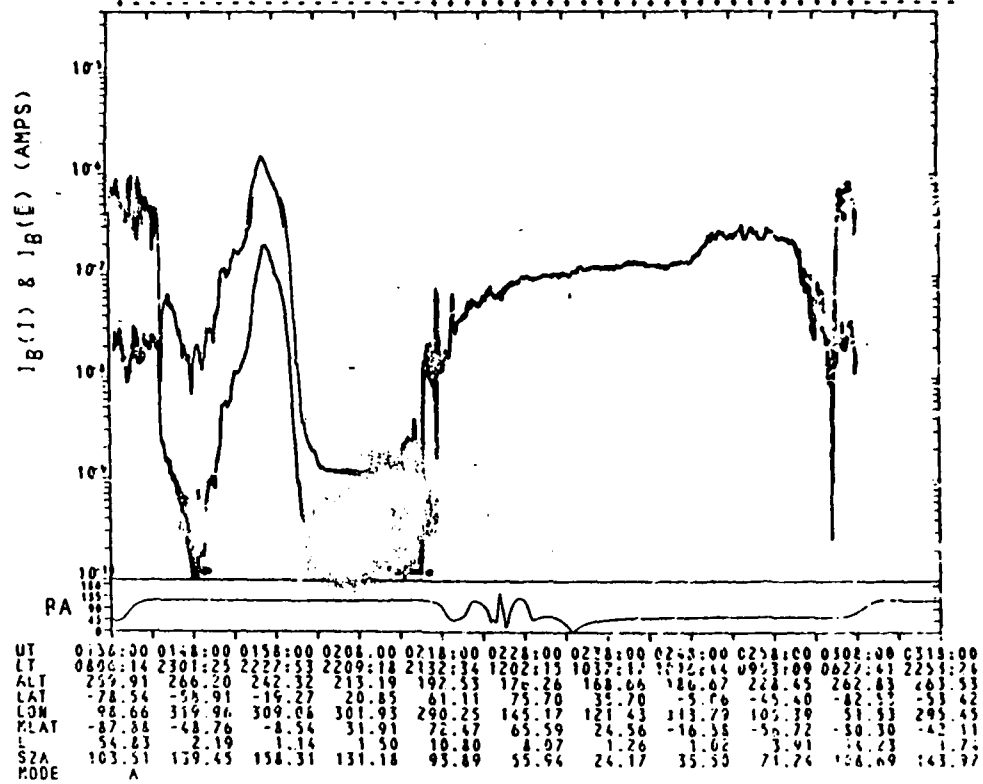


NRL 747

07/25/78

REV 2116

FORMAT A

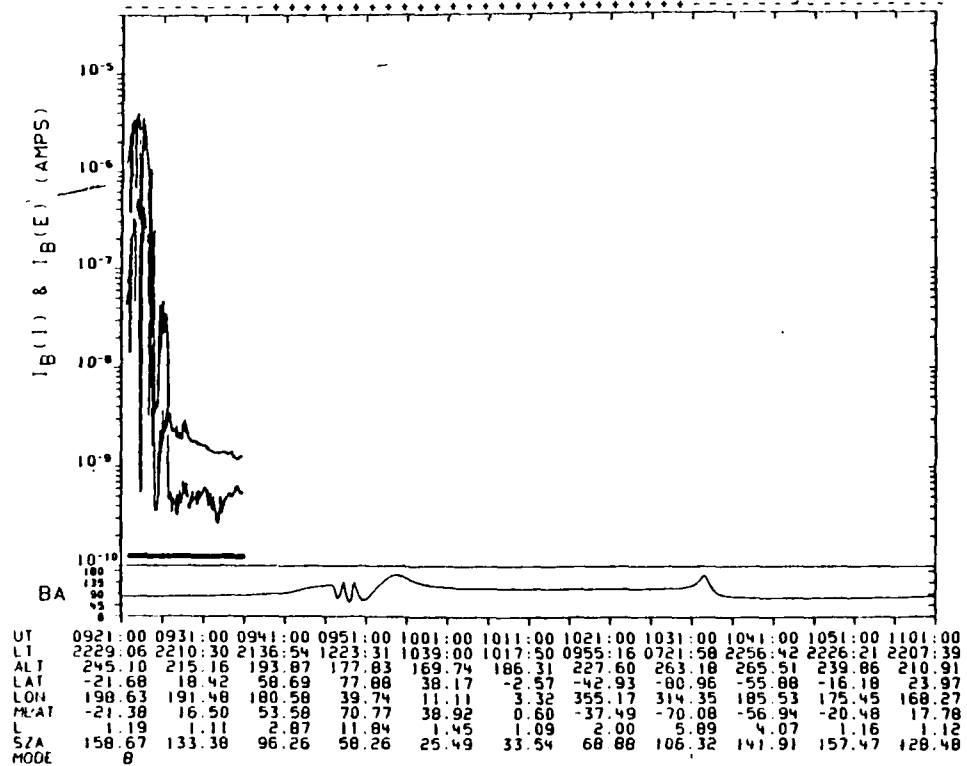


NRL 747

07/25/78

REV 2121

FORMAT C

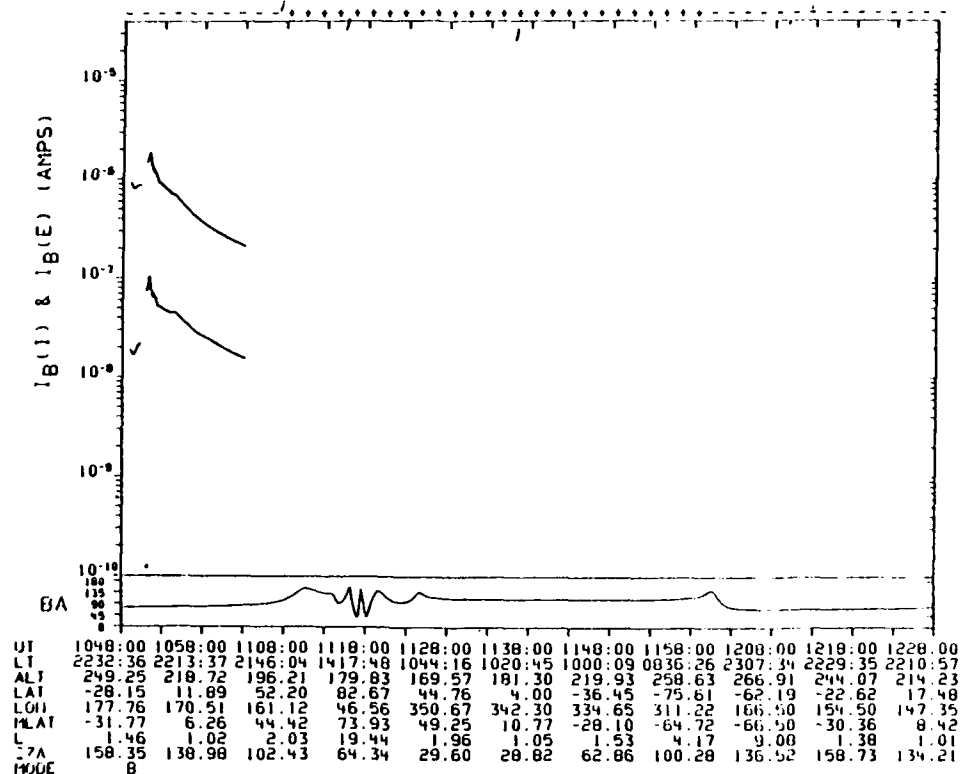


NRL 747

07/25/78

REV 2122

FORMAT C

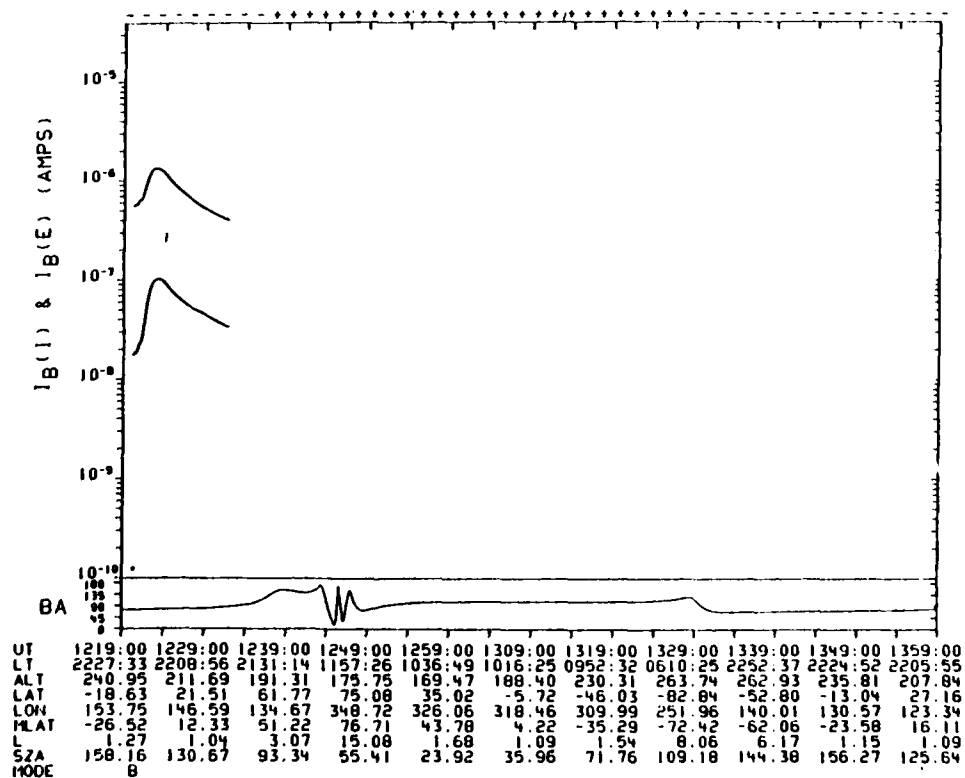


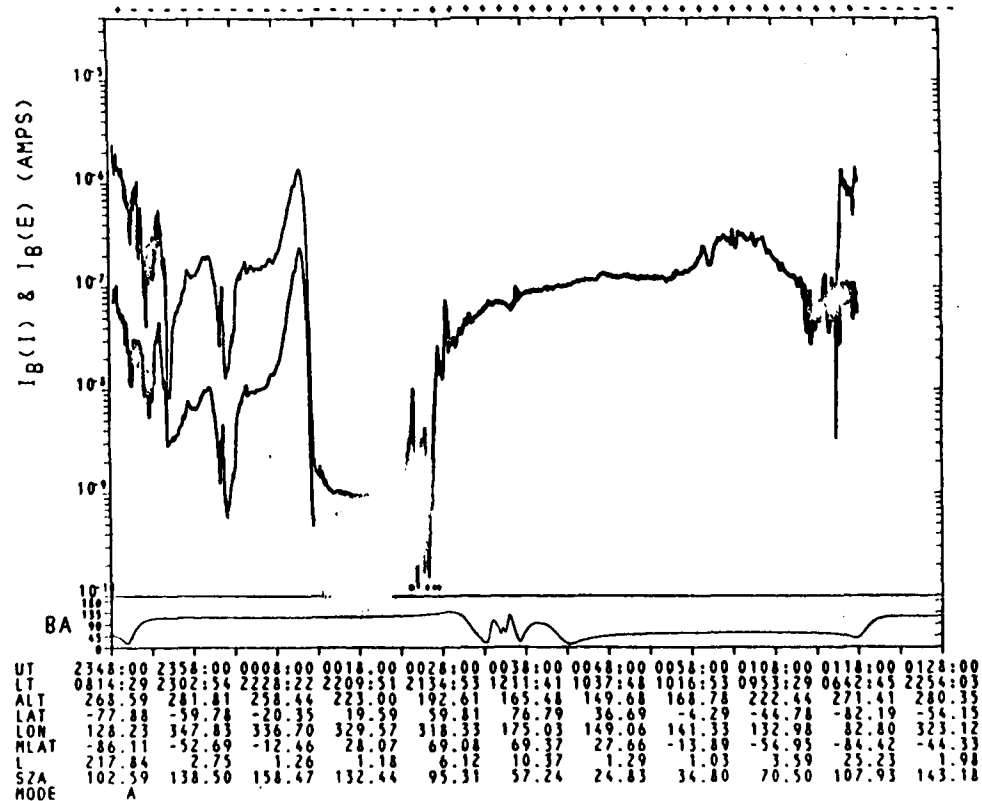
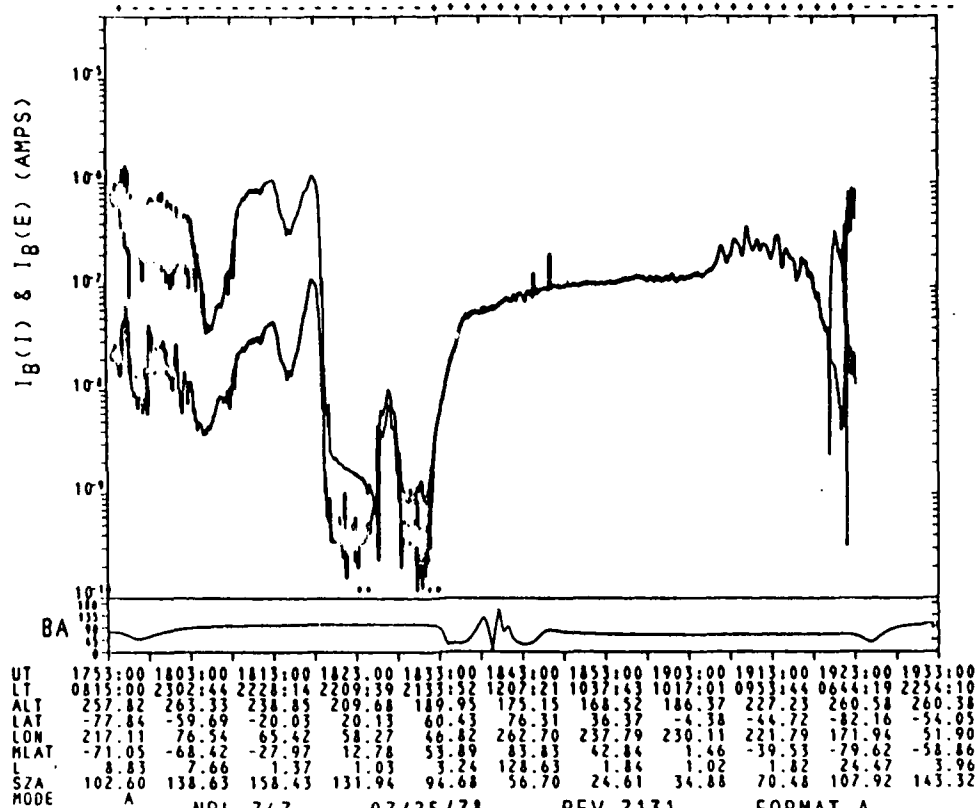
NRL 747

07/25/78

REV 2123

FORMAT C



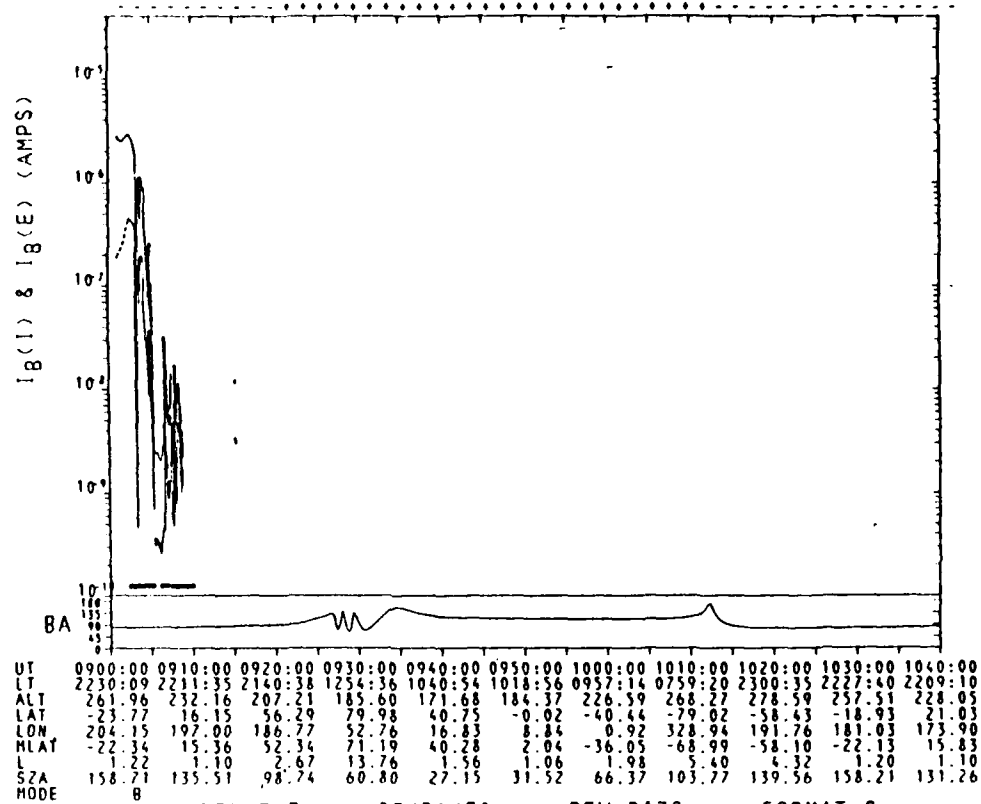


NRL 747

07/26/78

REV 2137

FORMAT C

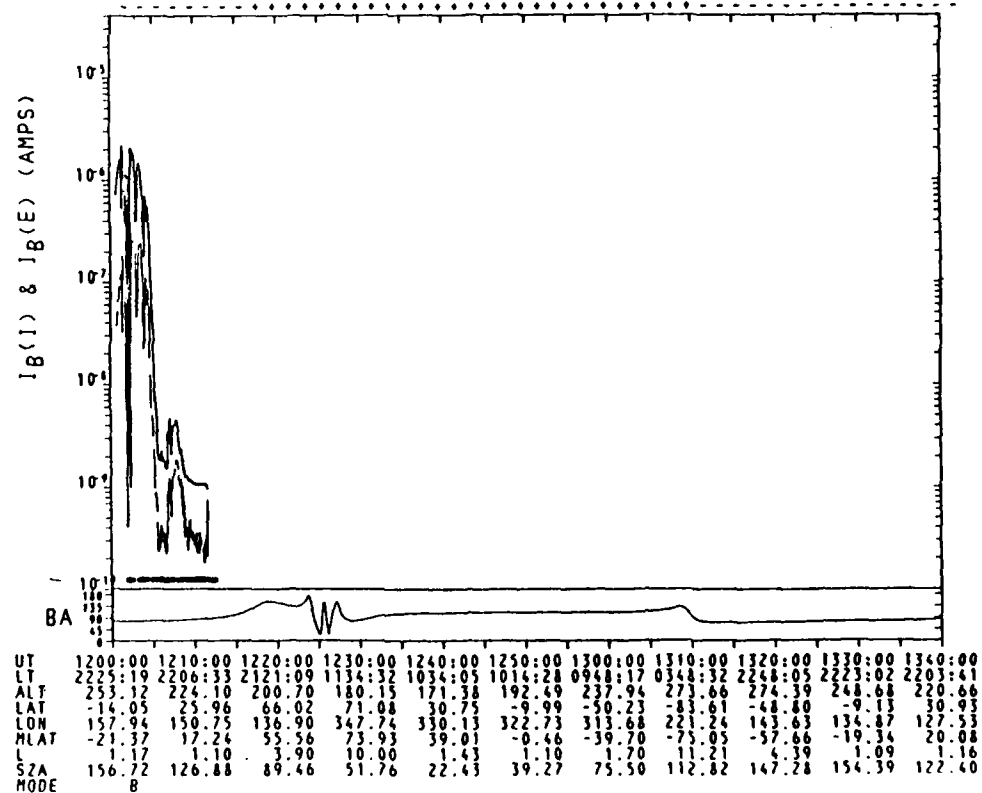


NRL 747

07/26/78

REV 2139

FORMAT C

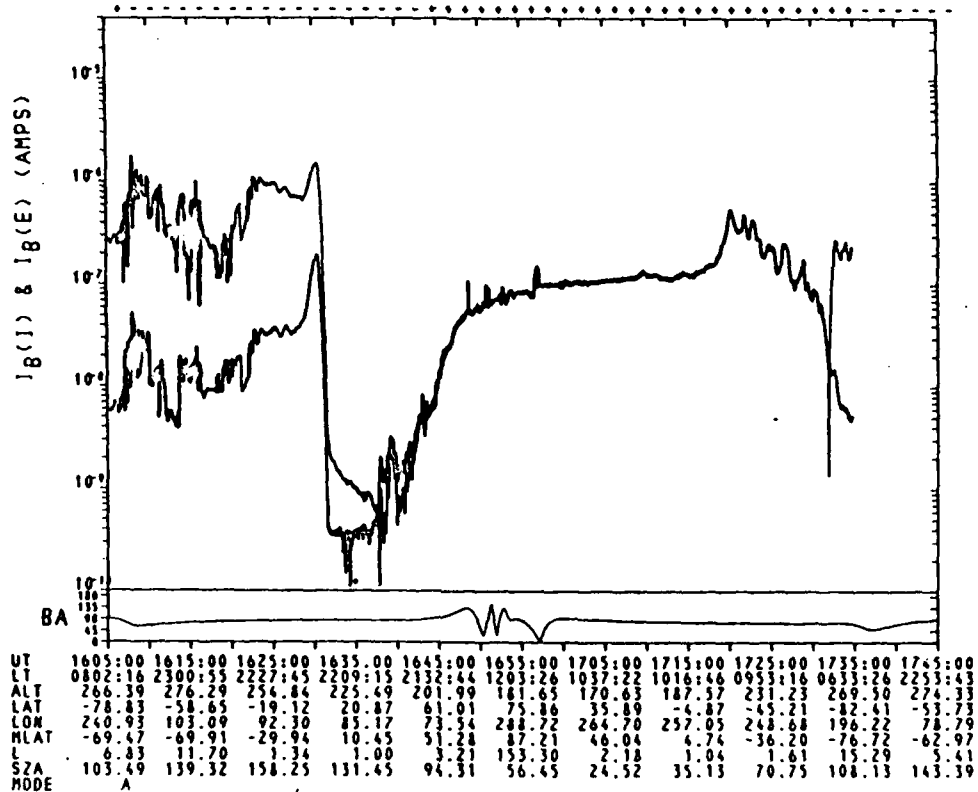


NRL 747

07/26/78

REV 2142

FORMAT A

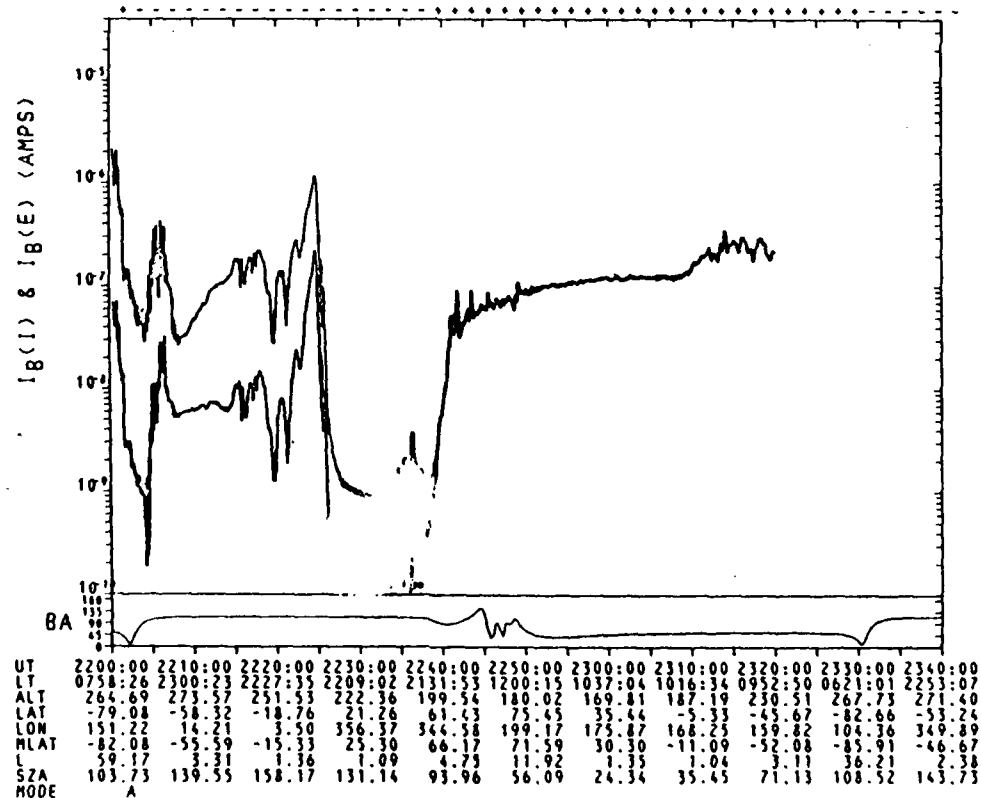


NRL 747

07/26/78

REV 2146

FORMAT A

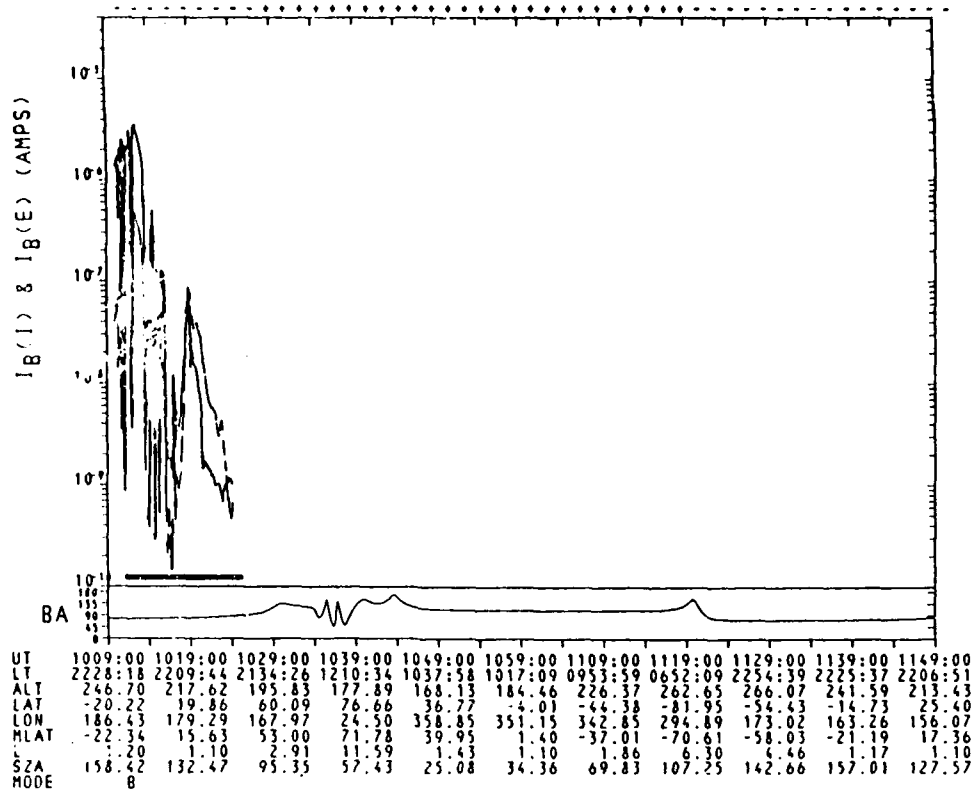


NRL 747

07/27/78

REV 2154

FORMAT C

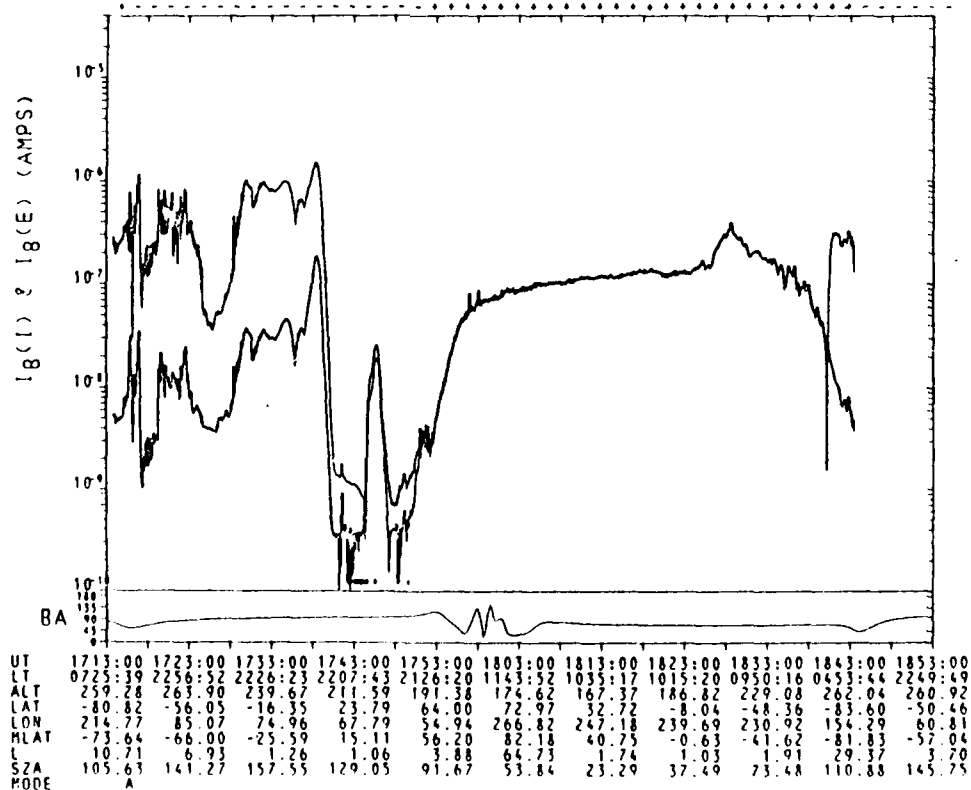


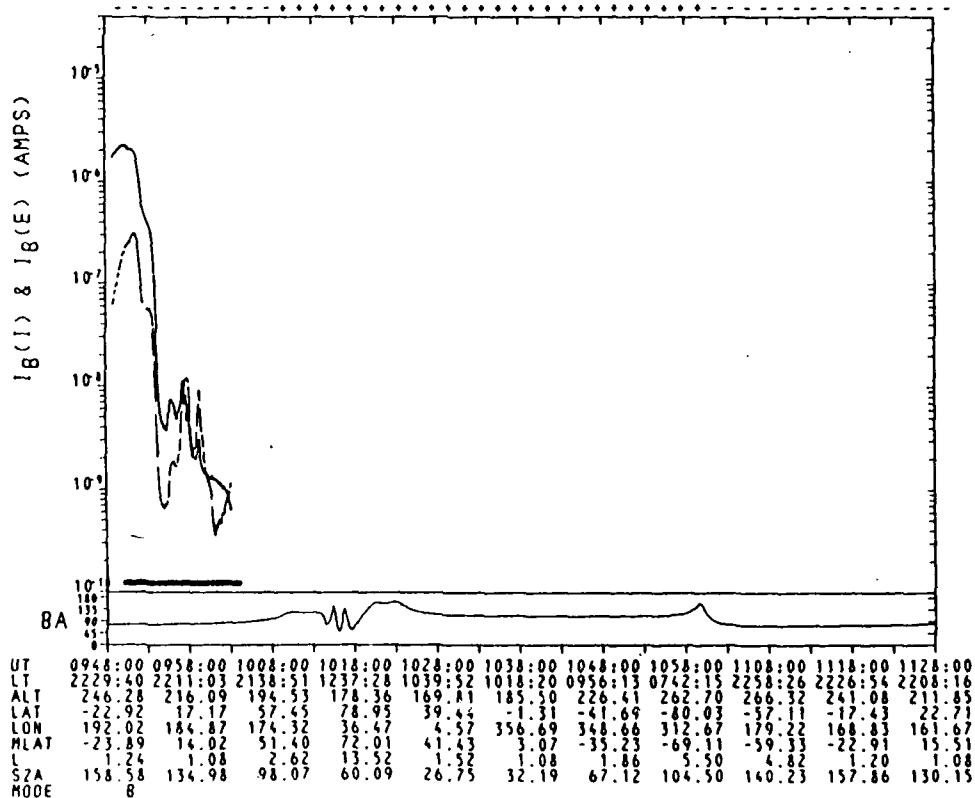
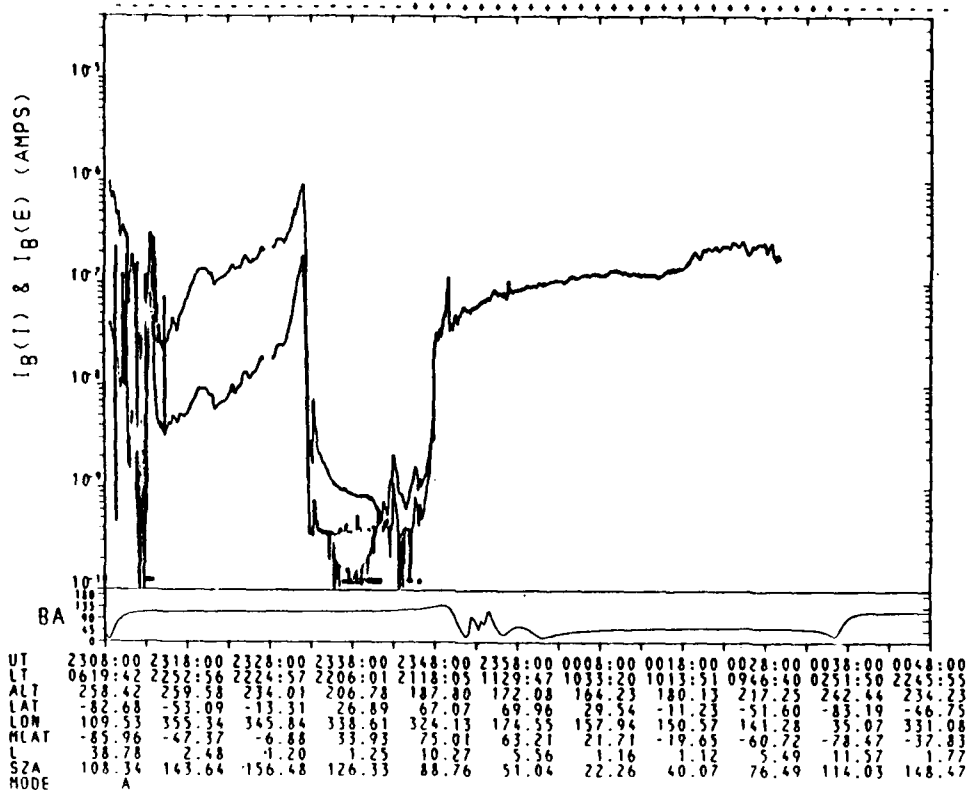
NRL 747

07/27/78

REV 2159

FORMAT A





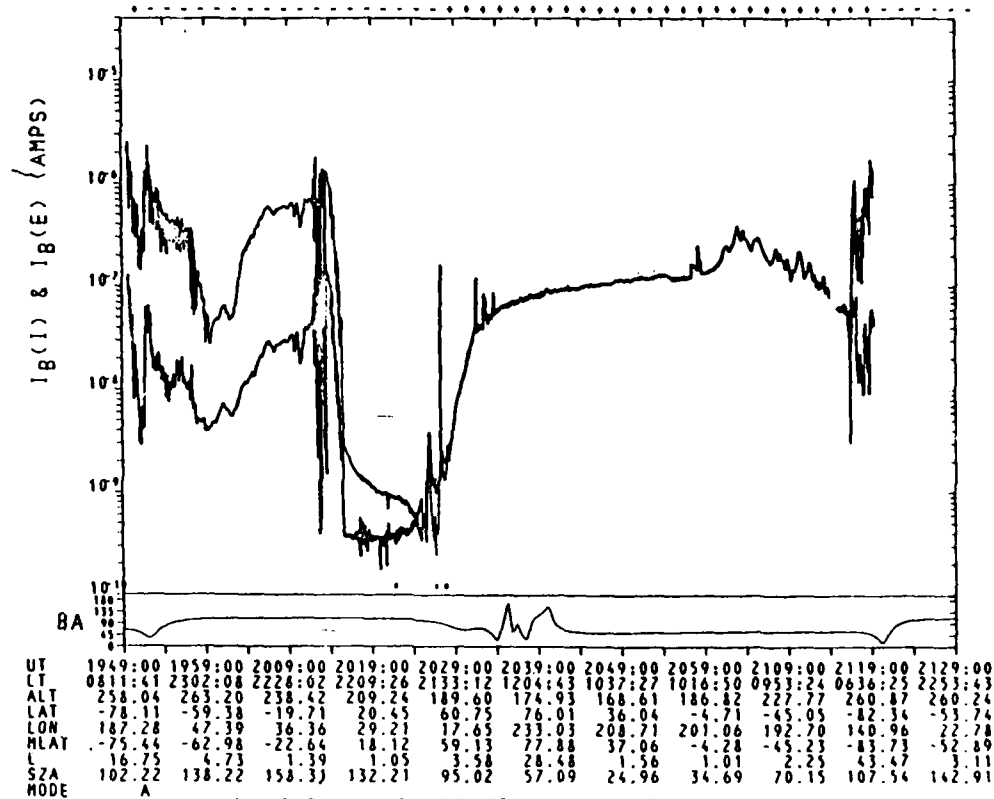


NRL 747

07/28/78

REV 2177

FORMAT A

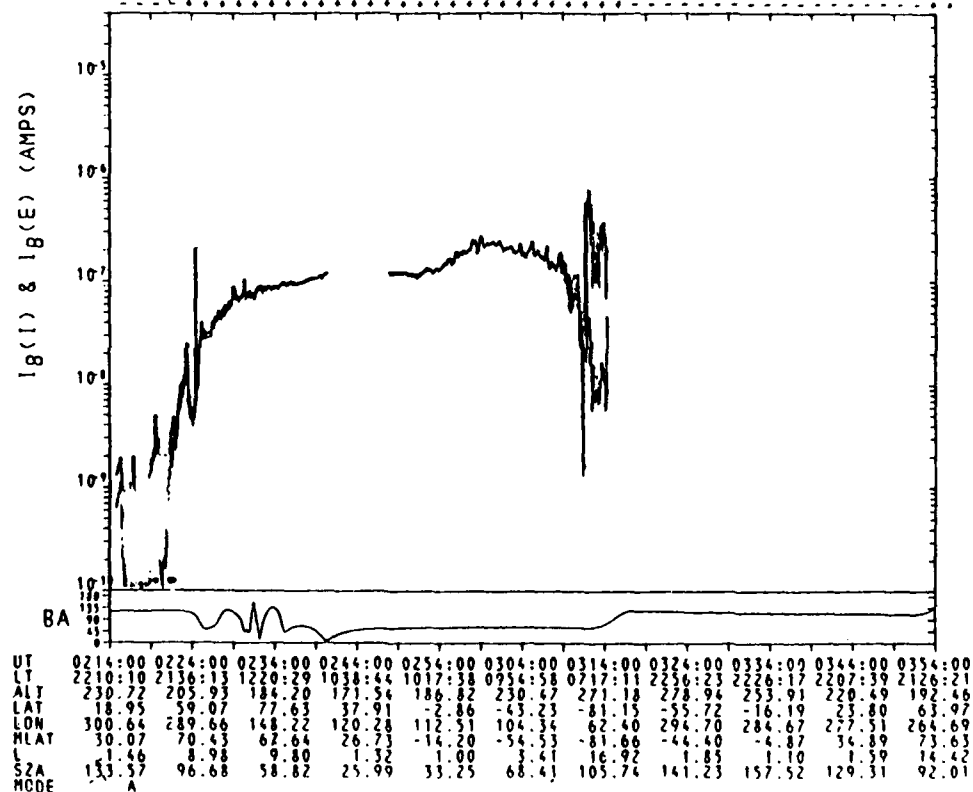


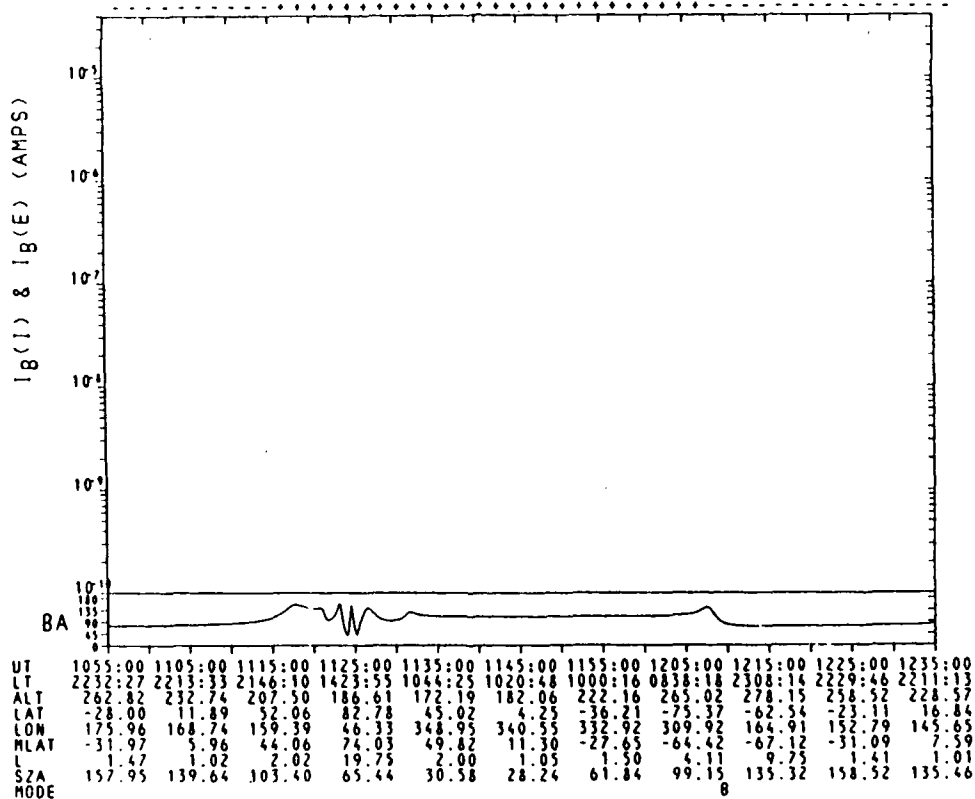
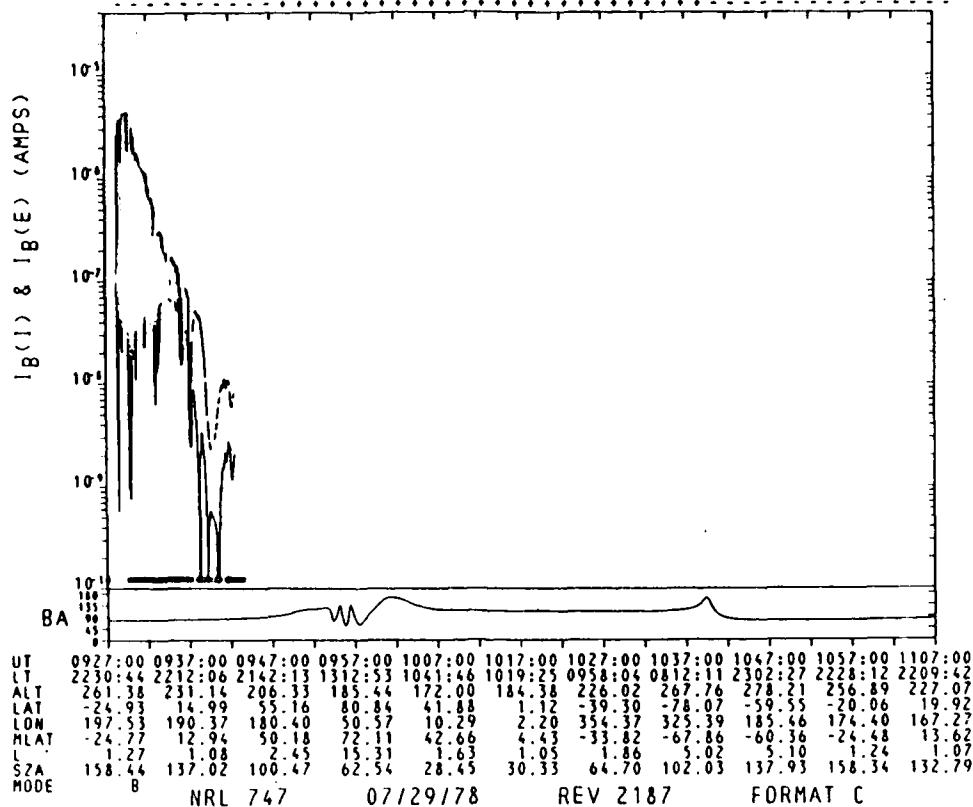
NRL 747

07/29/78

REV 2181

FORMAT A



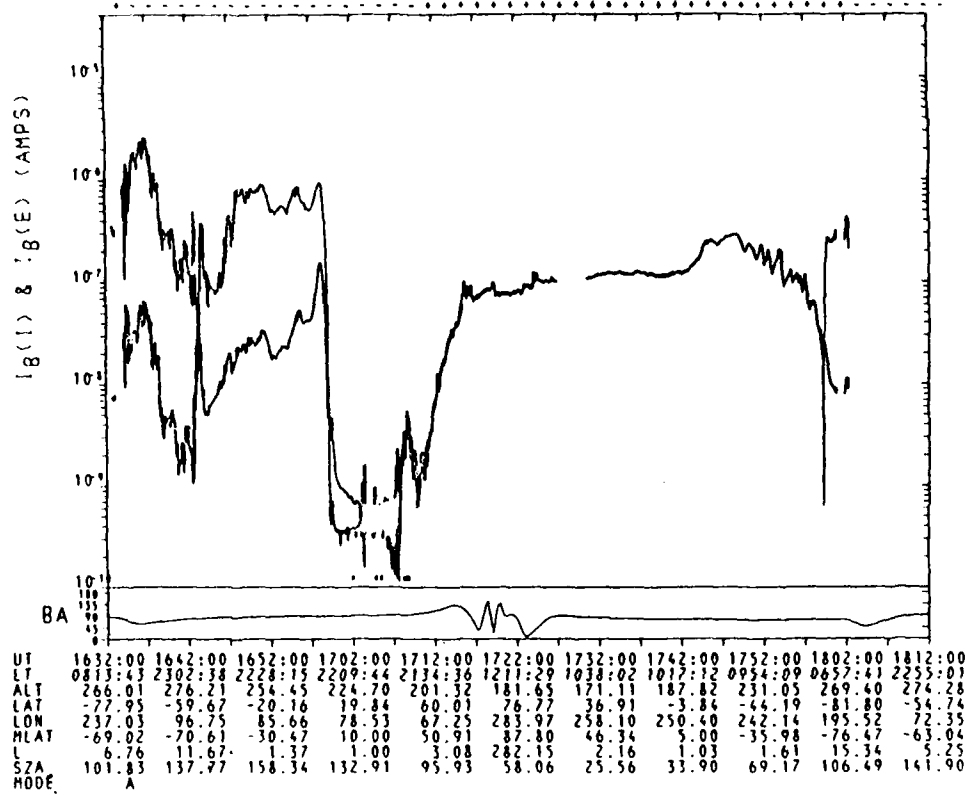


NRL 747

07/29/78

REV 2191

FORMAT A

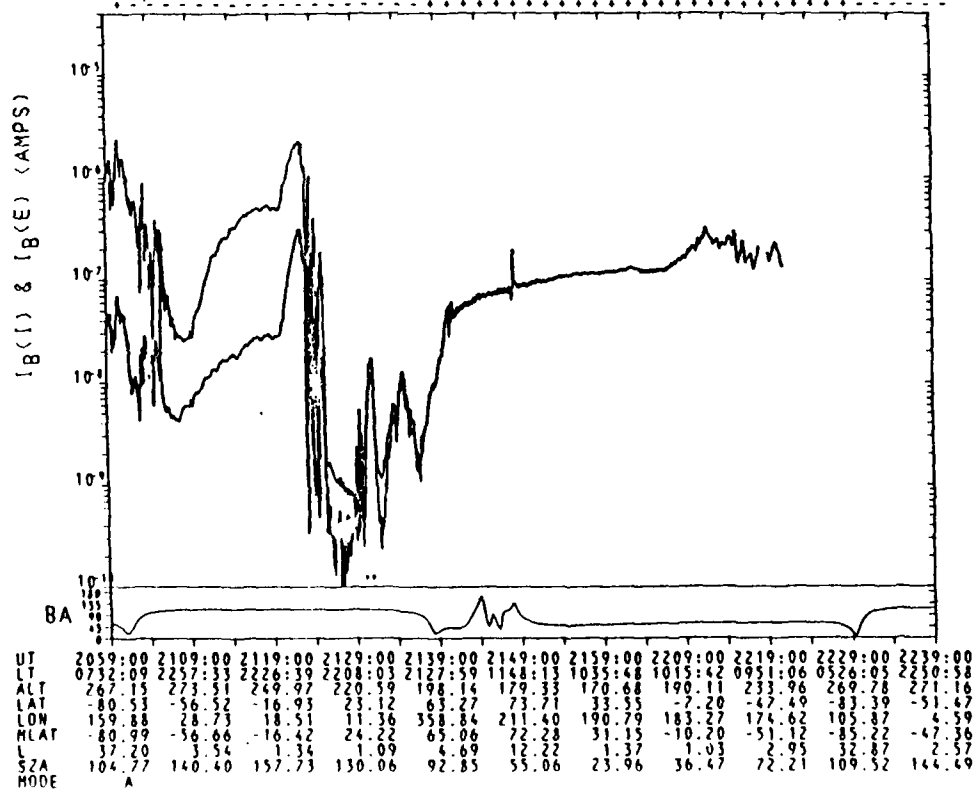


NRL 747

07/29/78

REV 2194

FORMAT A

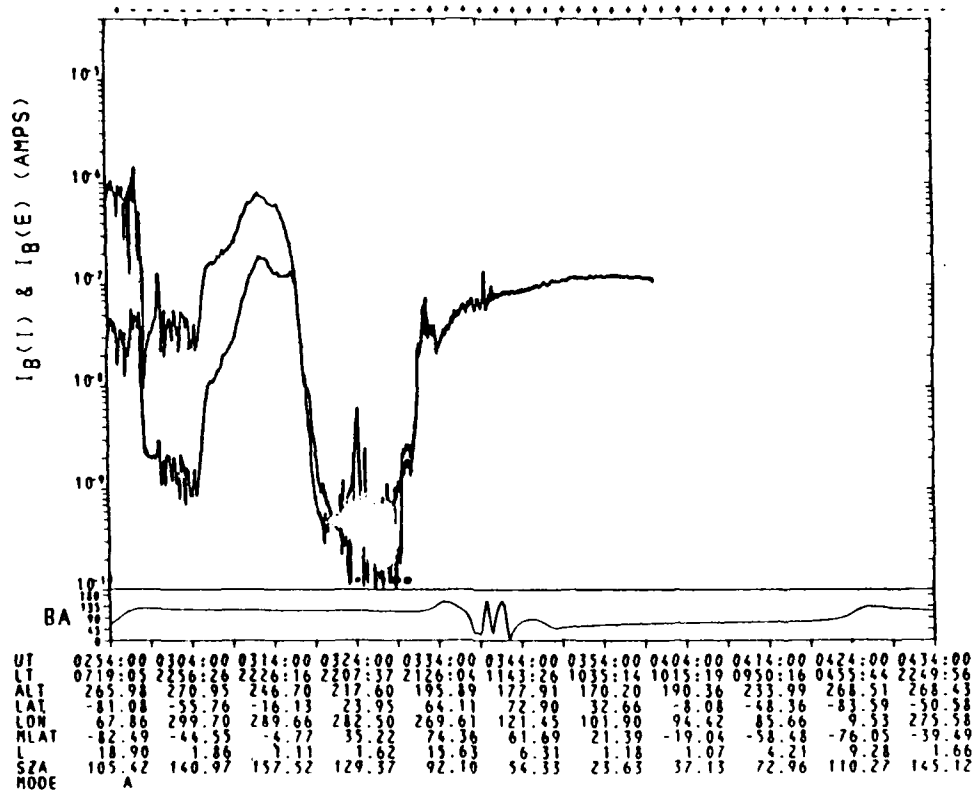


NRL 747

07/30/78

REV 2198

FORMAT A

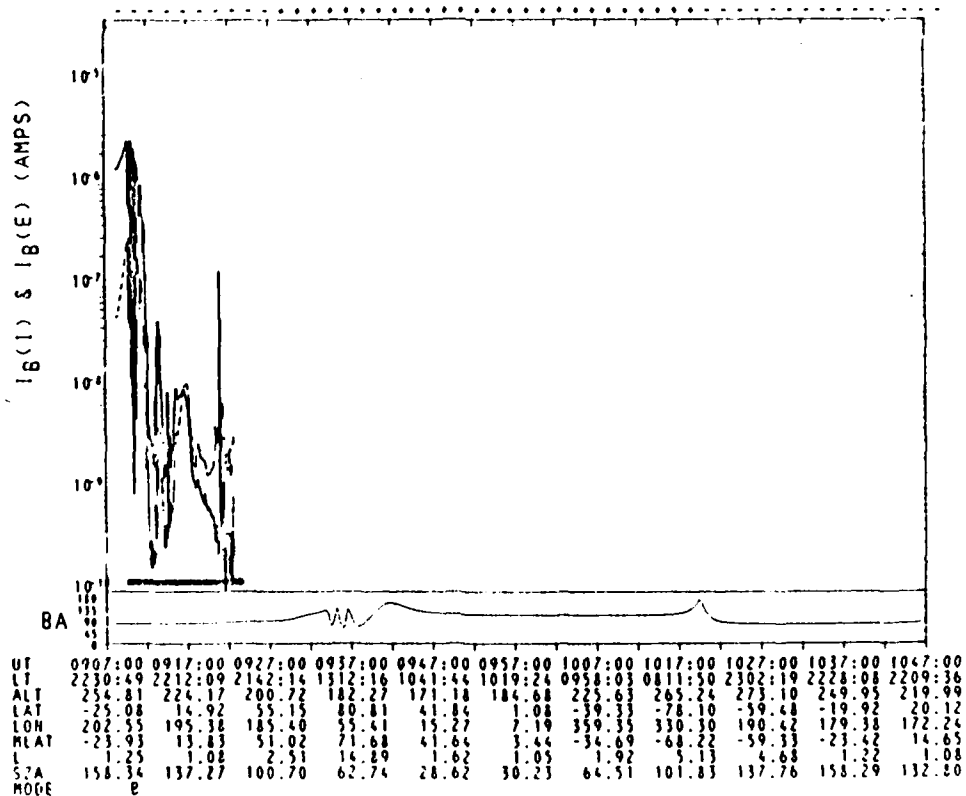


NRL 747

07/30/78

REV 2202

FORMAT C

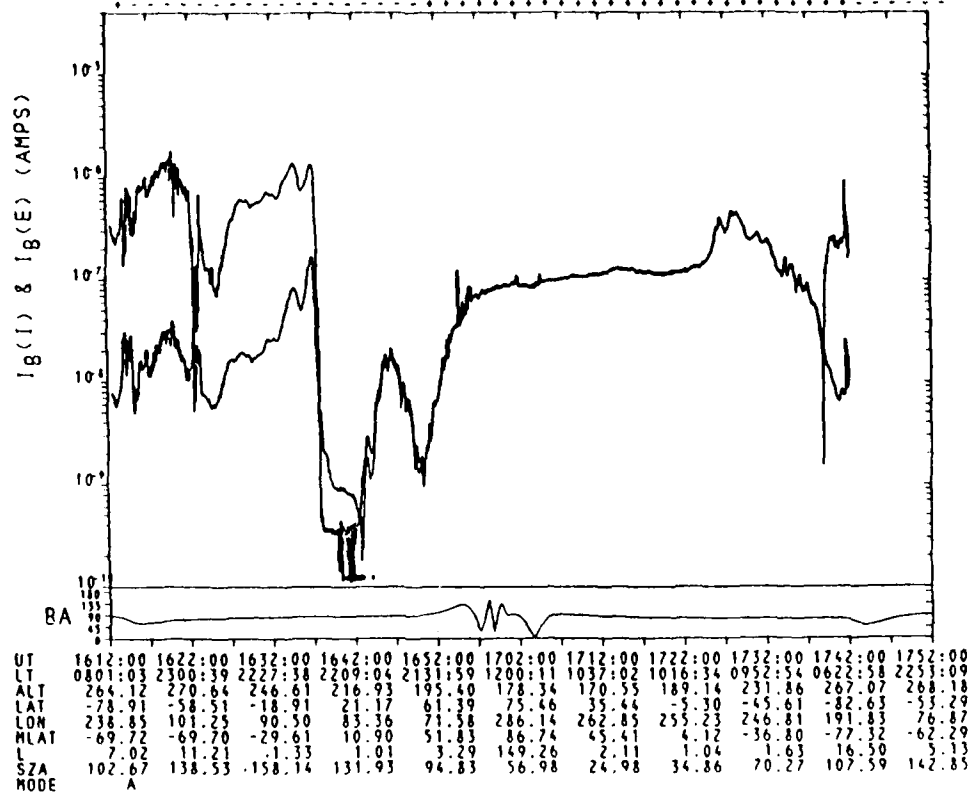


NRL 747

07/30/78

REV 2207

FORMAT A

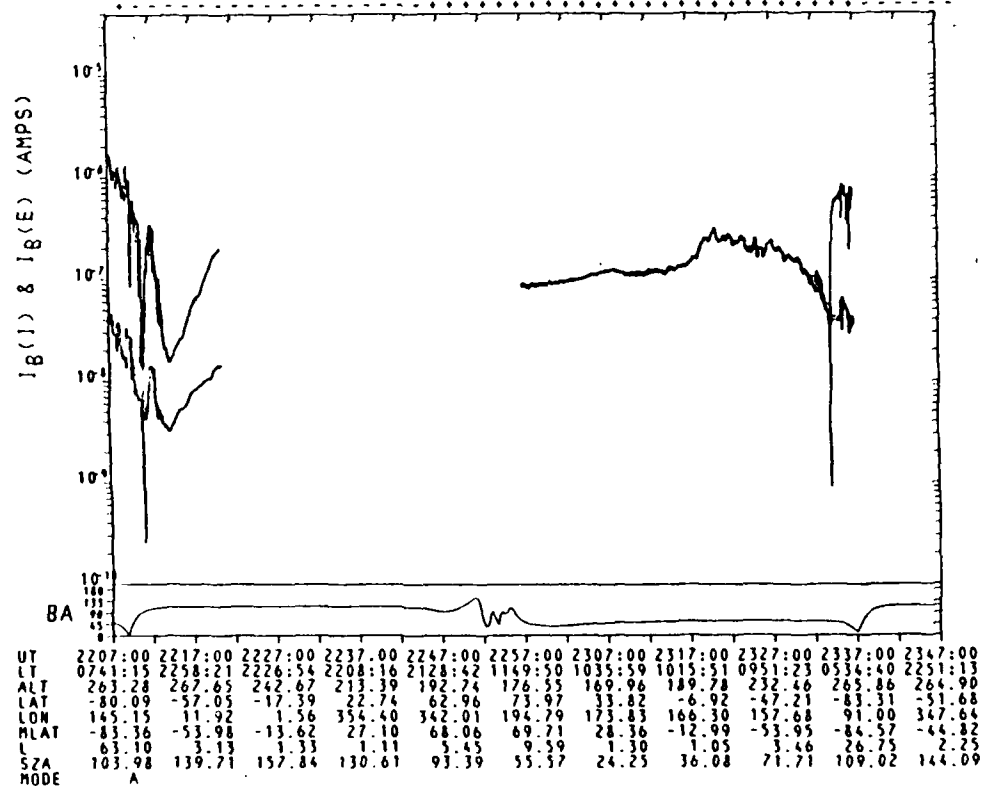


NRL 747

07/30/78

REV 2211

FORMAT A

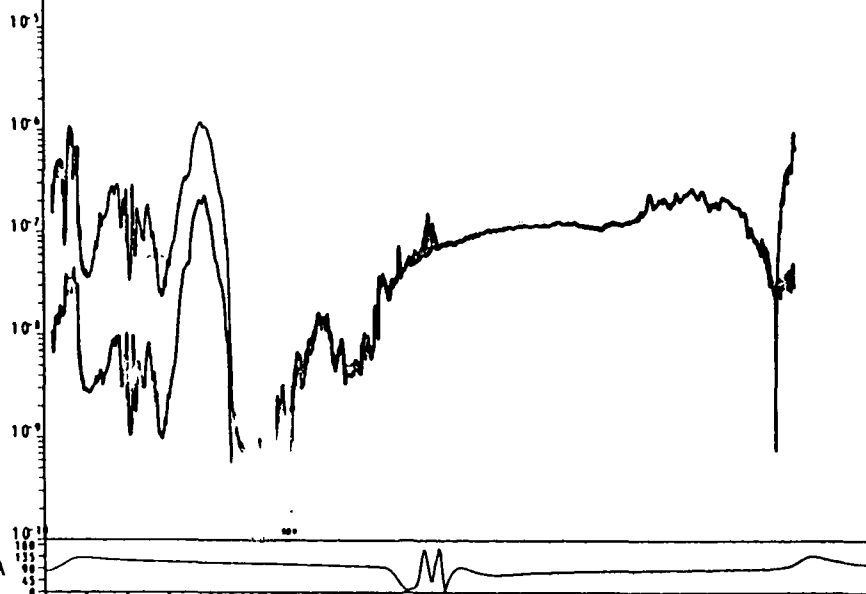


NRL 747

07/31/78

REV 2215

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

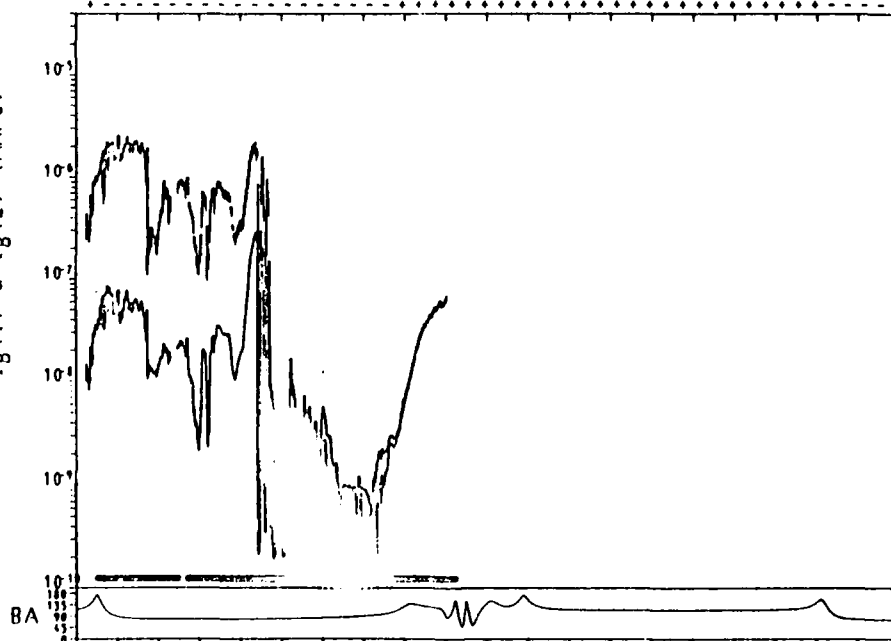
UT	0401:00	0411:00	0421:00	0431:00	0441:00	0451:00	0501:00	0511:00	0521:00	0531:00	0541:00
LT	0806:50	2301:25	2227:51	2209:16	2132:36	1202:15	1037:14	1016:42	0953:09	0629:00	2253:23
ALT	260.19	266.01	241.50	212.16	191.74	176.07	169.21	187.62	229.31	263.29	263.30
LAT	-78.50	-58.96	-19.31	20.82	61.09	75.72	35.72	-5.03	-45.36	-82.51	-53.47
LOW	63.04	284.19	273.30	266.15	254.48	109.40	83.64	78.01	69.62	16.08	259.68
MLAT	-81.06	-47.63	-8.38	31.17	69.44	64.36	23.21	-14.68	-53.51	-76.06	-43.31
L	16.31	2.04	-1.10	1.41	9.01	8.02	1.26	1.04	3.16	9.23	1.89
SZA	102.09	138.03	158.19	132.34	95.24	57.36	25.21	34.57	69.92	107.26	142.59
MODE	A										

NRL 747

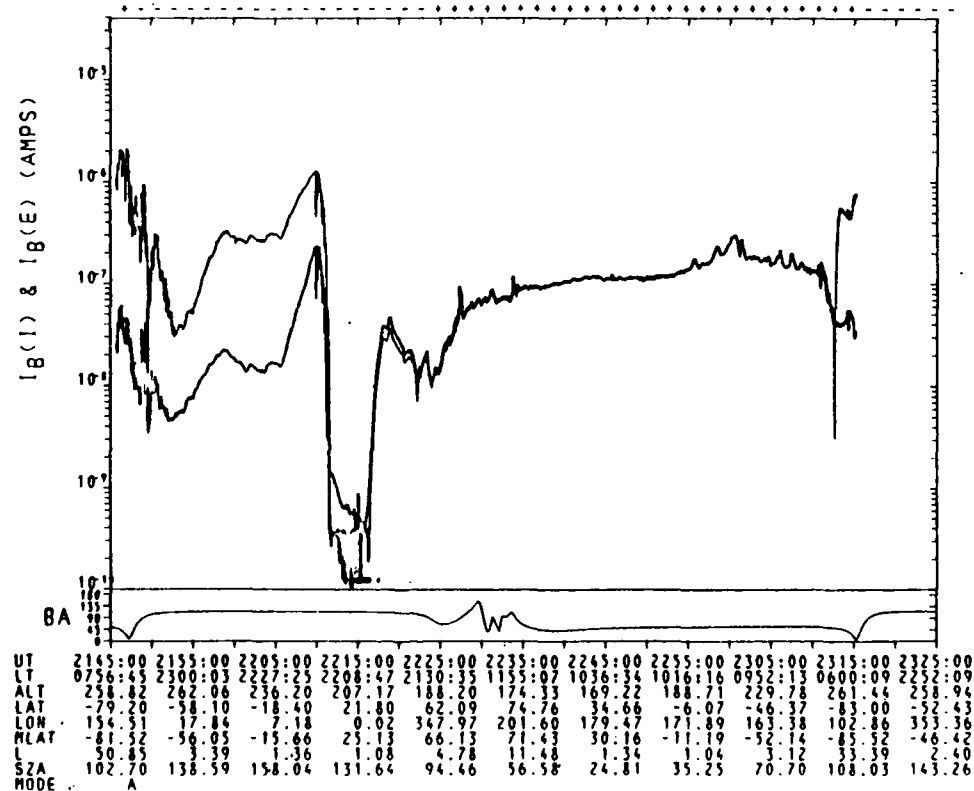
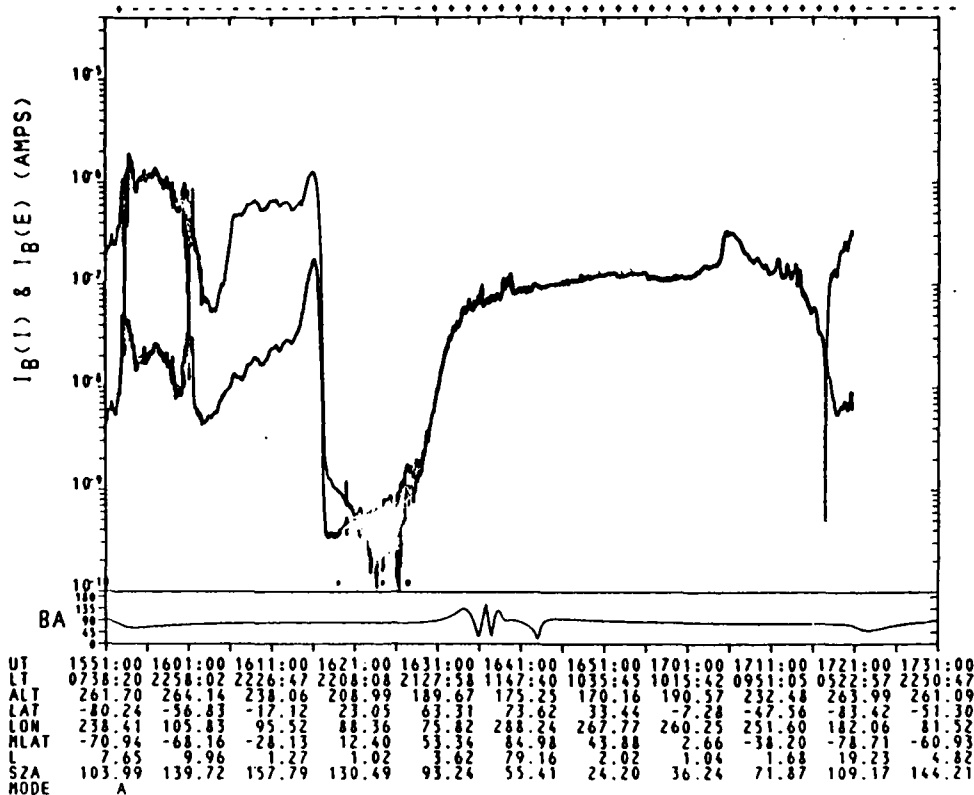
07/31/78

REV 2219

FORMAT C

 $I_B(I)$  &  $I_B(E)$  (AMPS)

UT	0956:00	1006:00	1016:00	1026:00	1036:00	1046:00	1056:00	1106:00	1116:00	1126:00	1136:00
LT	0806:29	2301:26	2227:52	2209:16	2132:35	1202:26	1037:16	1016:43	0953:11	0630:48	2253:32
ALT	262.12	267.37	242.44	212.75	192.32	176.96	170.52	189.33	231.16	264.95	264.63
LAT	-78.52	-58.95	-19.31	20.81	61.08	75.73	35.74	-4.99	-45.30	-82.46	-53.56
LOW	334.20	195.44	184.55	177.40	165.73	20.69	356.90	349.26	340.88	287.78	170.96
MLAT	-68.90	-57.88	-21.83	16.23	53.65	71.63	39.33	0.75	-37.64	-71.11	-57.61
L	5.36	4.21	1.19	1.10	3.04	10.88	1.39	1.11	1.86	6.63	4.34
SZA	102.05	137.98	158.19	132.40	95.31	57.43	25.26	34.50	69.82	107.13	142.46
MODE	C										

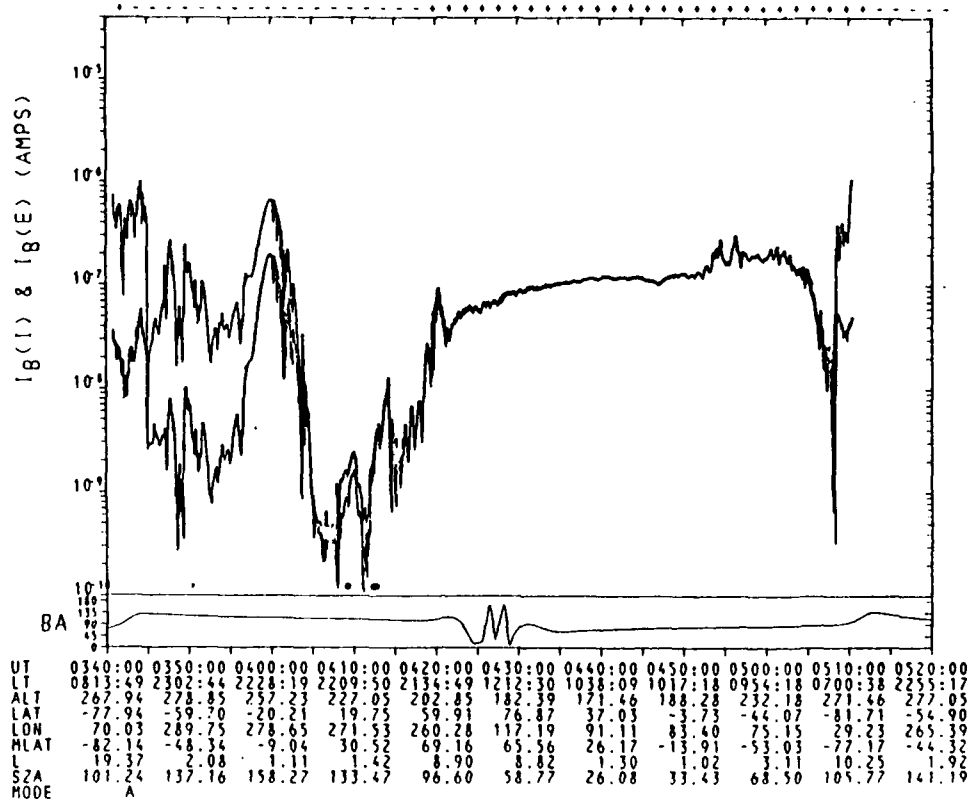


NRL 747

08/01/78

REV 2231

FORMAT A



NRL 747

08/01/78

REV 2236

FORMAT C

NOT CURRENTLY AVAILABLE

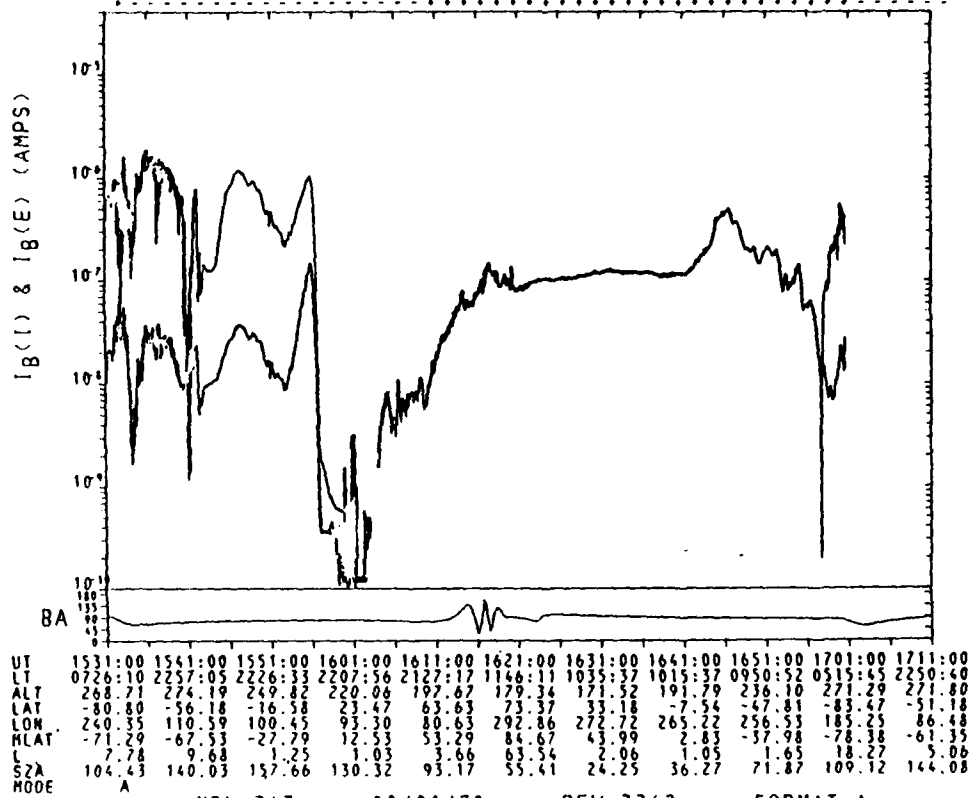


NRL 747

08/01/78

REV 2239

FORMAT A

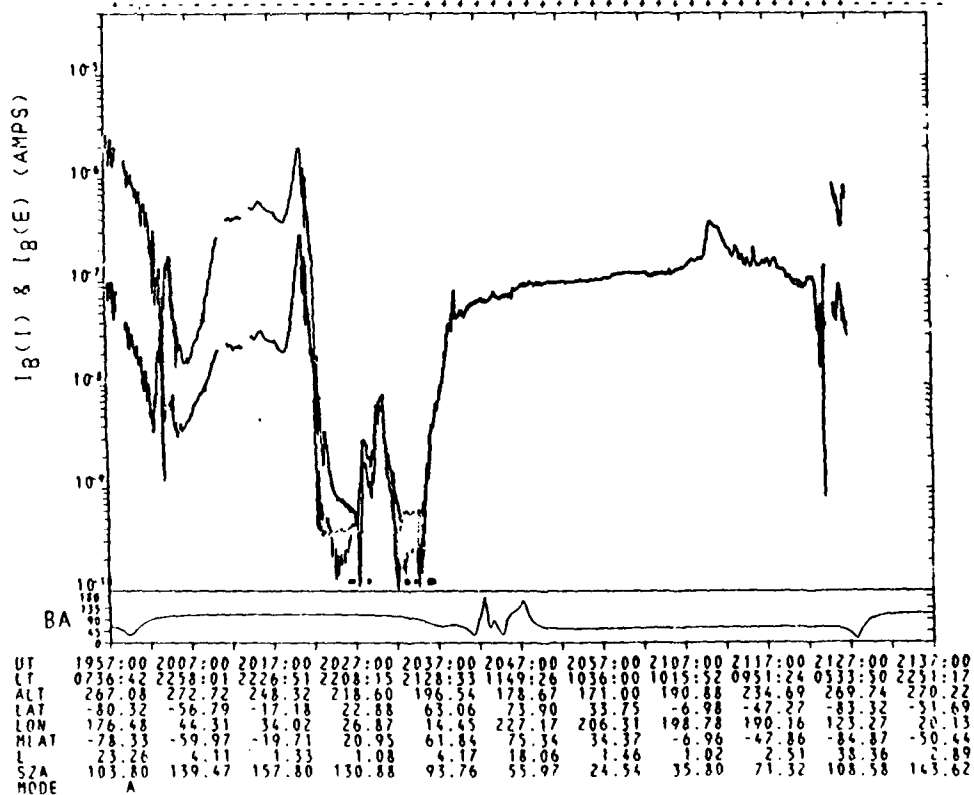


NRL 747

08/01/78

REV 2242

FORMAT A

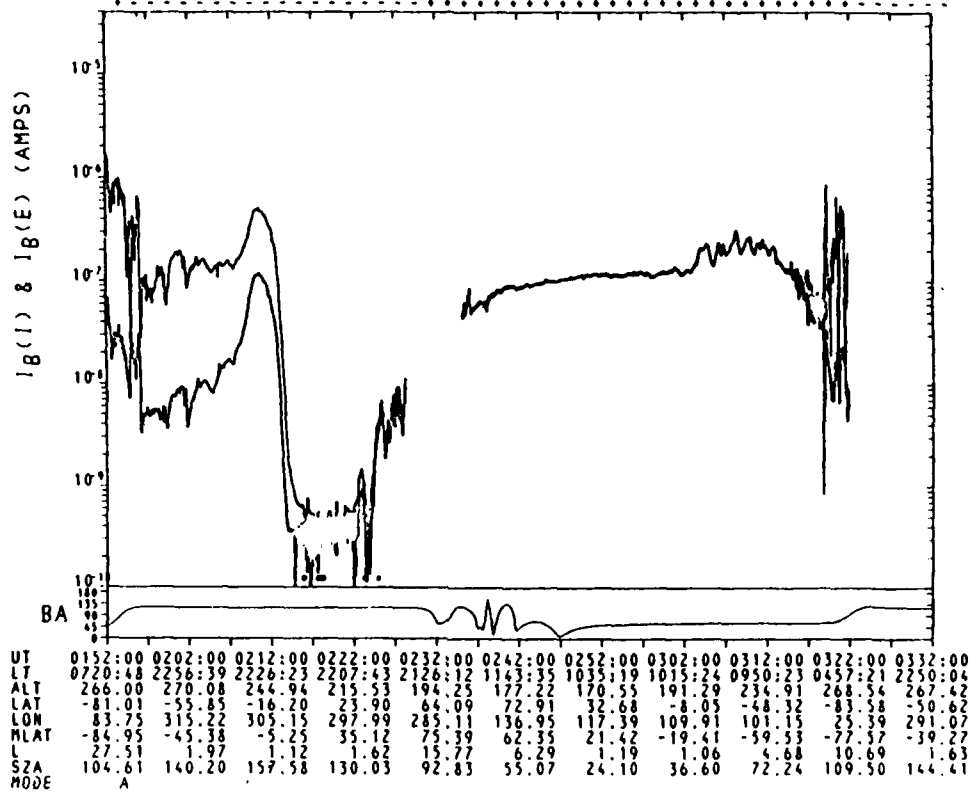


NRL 747

08/02/78

REV 2246

FORMAT A



NRL 747

08/02/78

REV 2254

FORMAT C

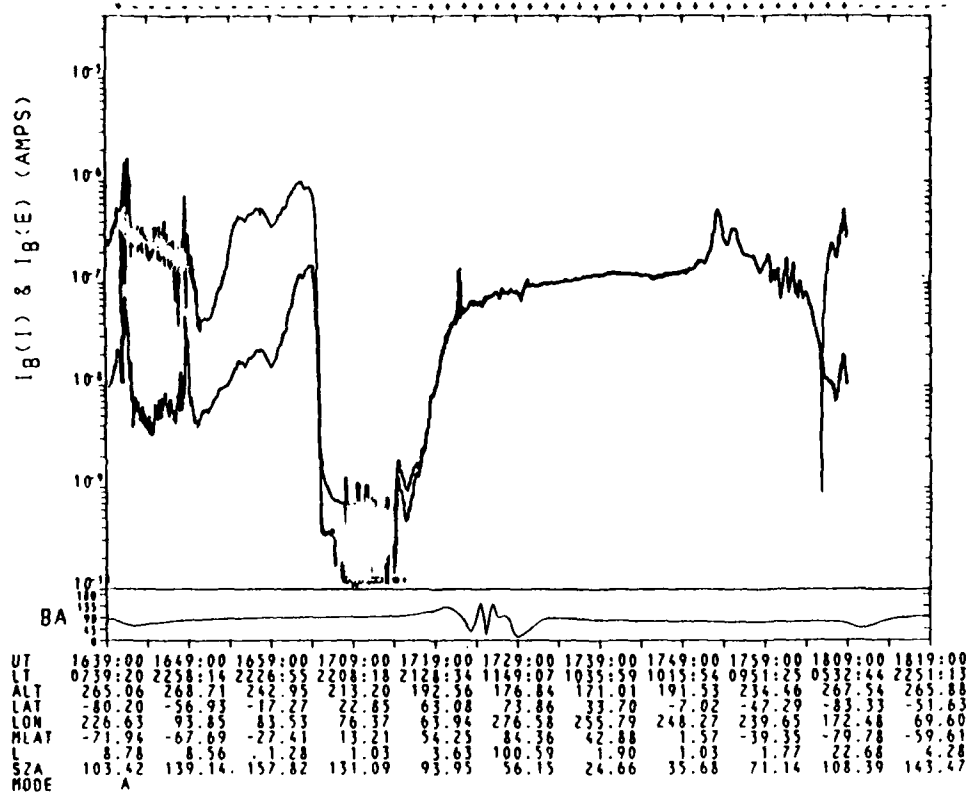
NOT CURRENTLY AVAILABLE

NRL 747

08/02/78

REV 2256

FORMAT A

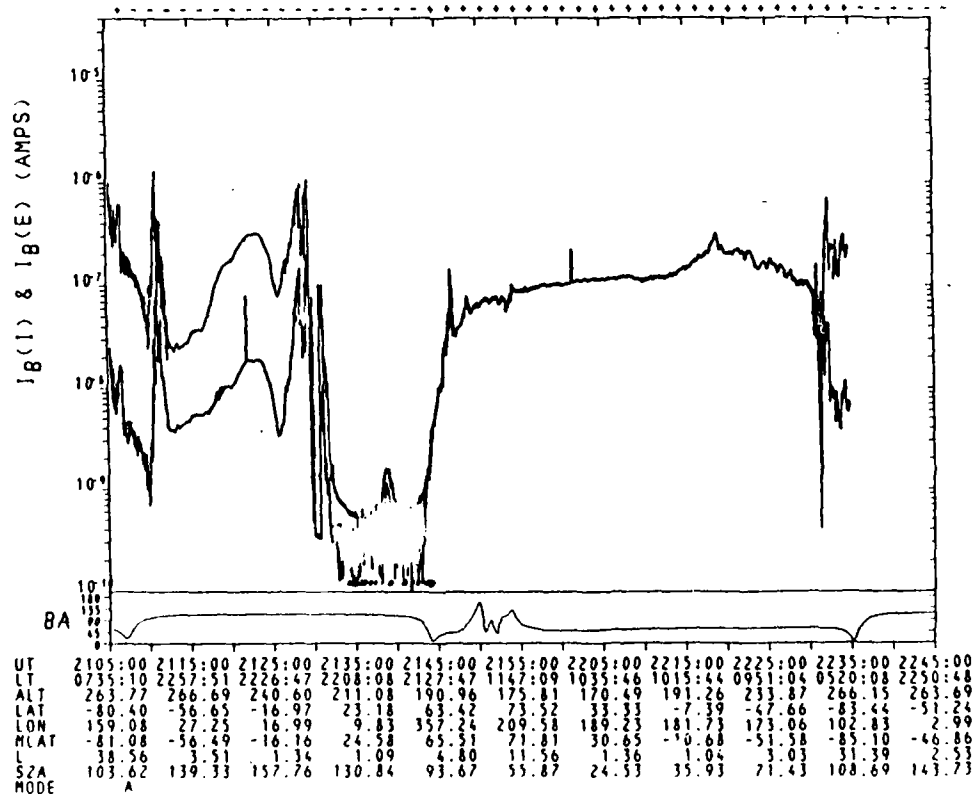


NRL 747

08/02/78

REV 2259

FORMAT A

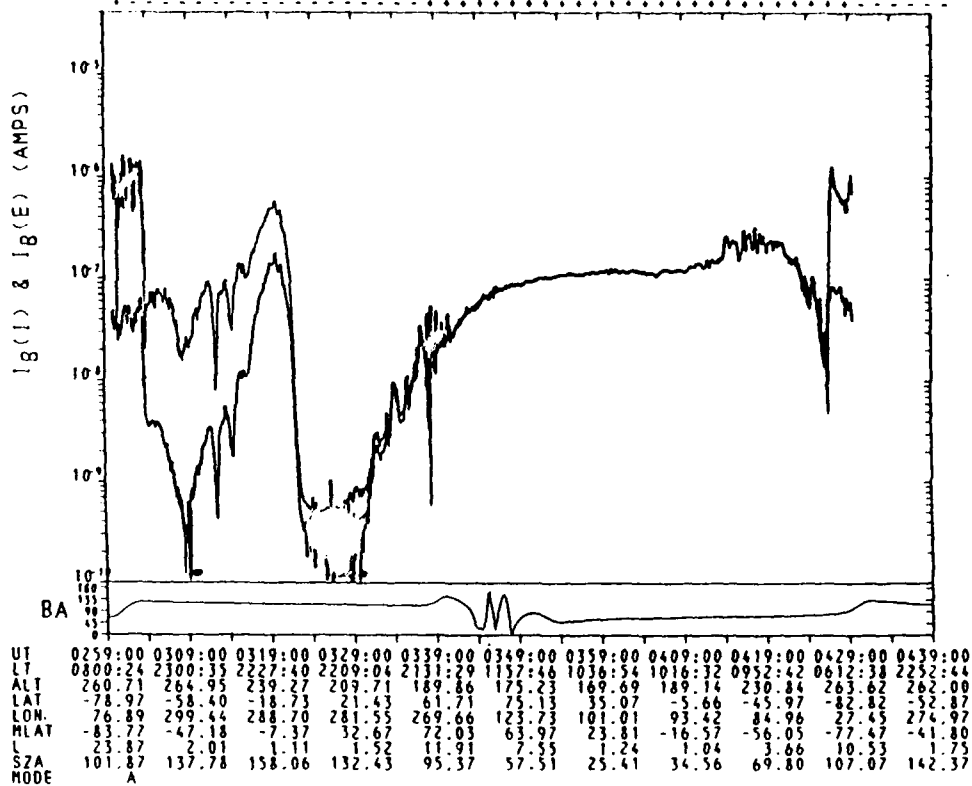


NRL 747

08/03/78

REV 2263

FORMAT A

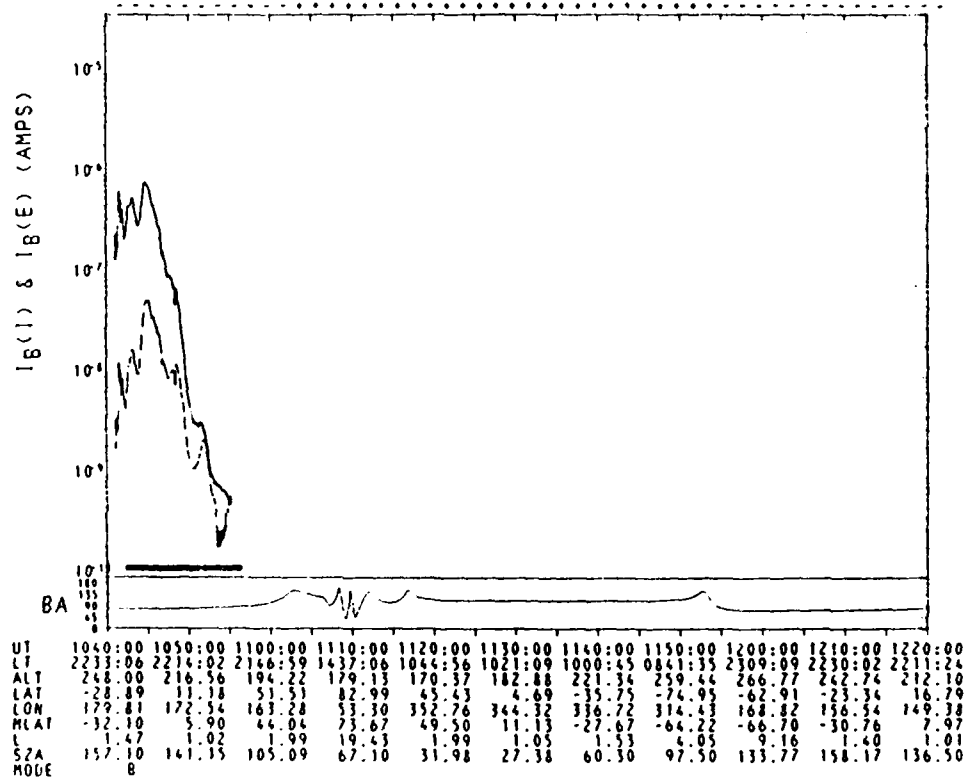


NRL 747

08/03/78

REV 2268

FORMAT C

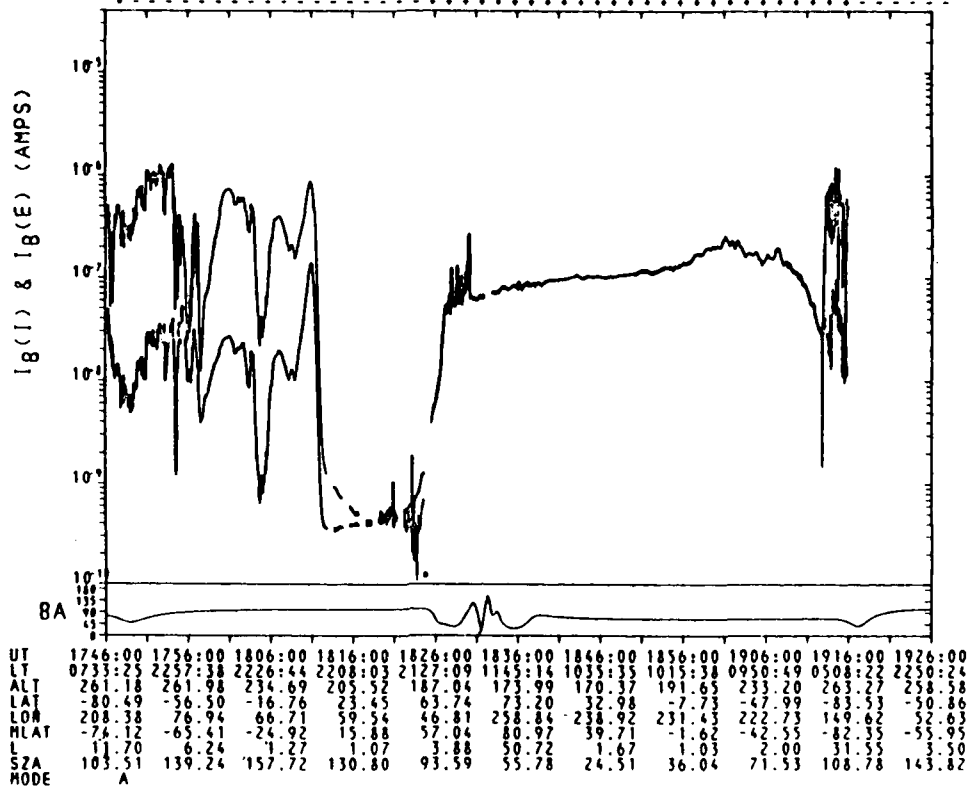


NRL 747

08/03/78

REV 2273

FORMAT A

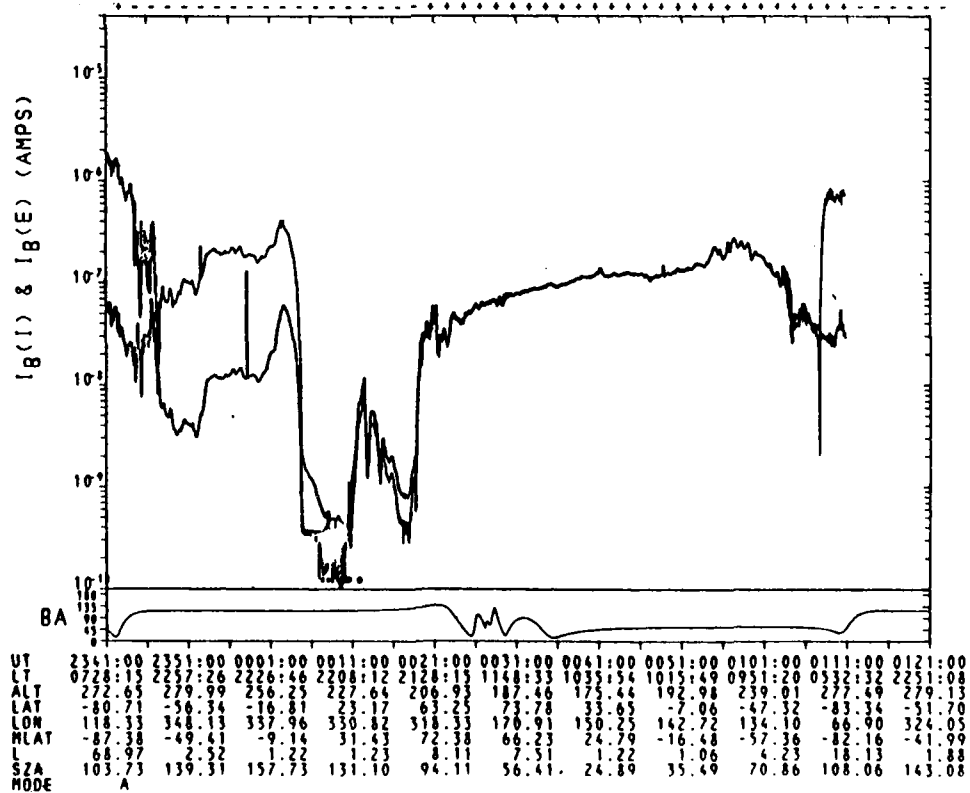


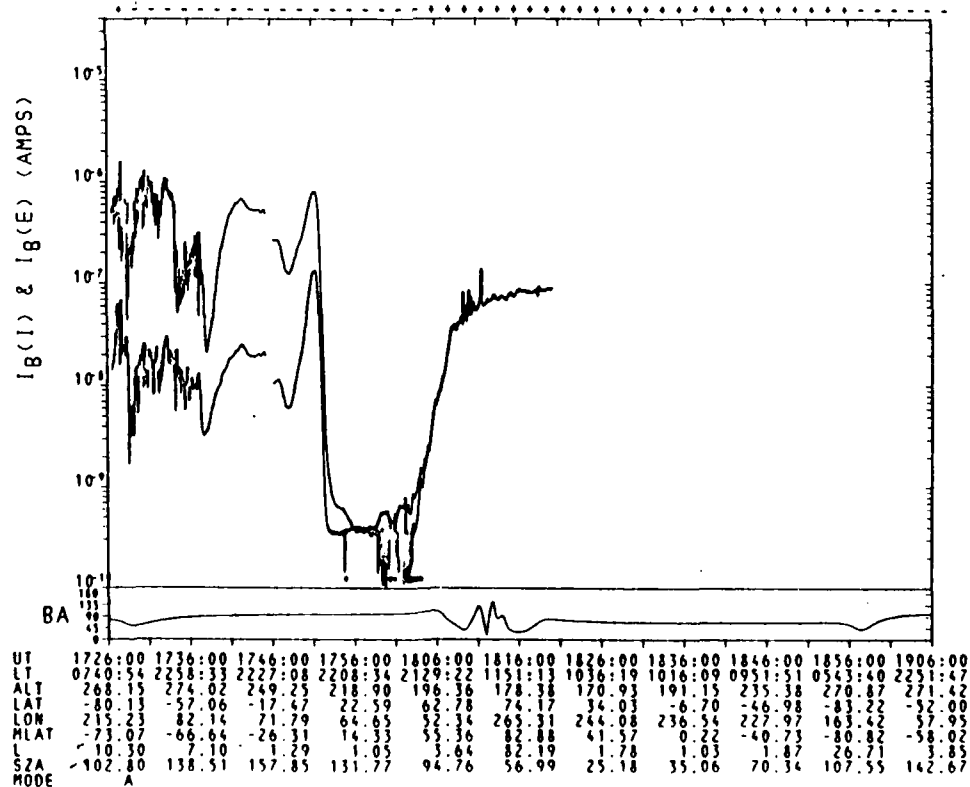
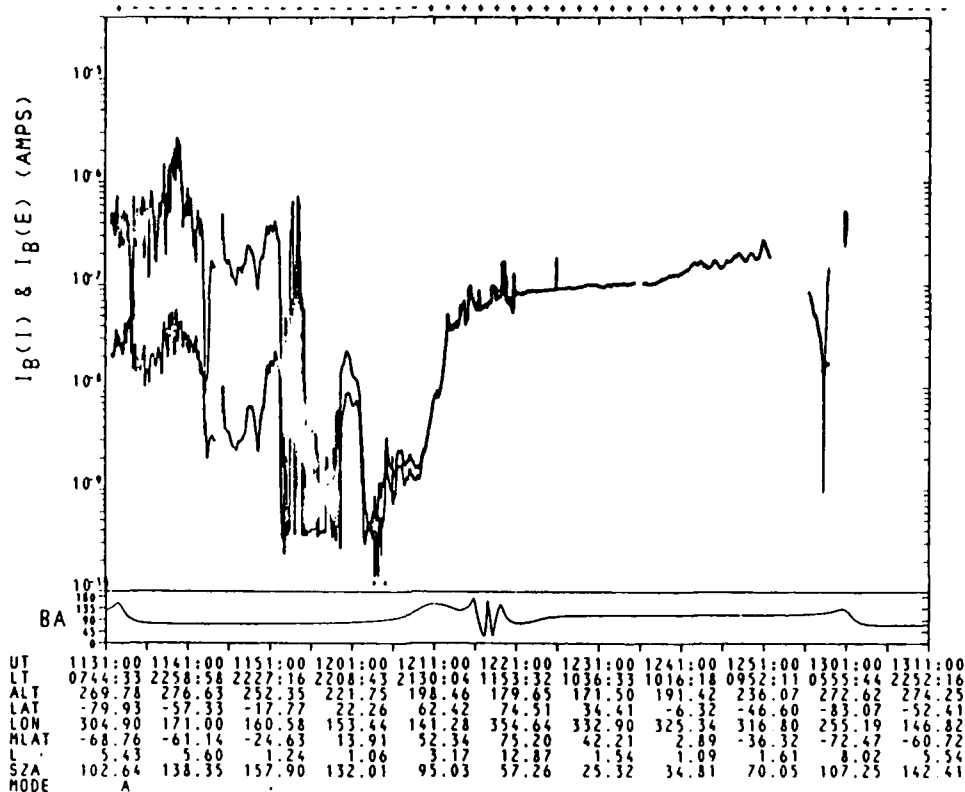
NRL 747

08/03/78

REV 2277

FORMAT A



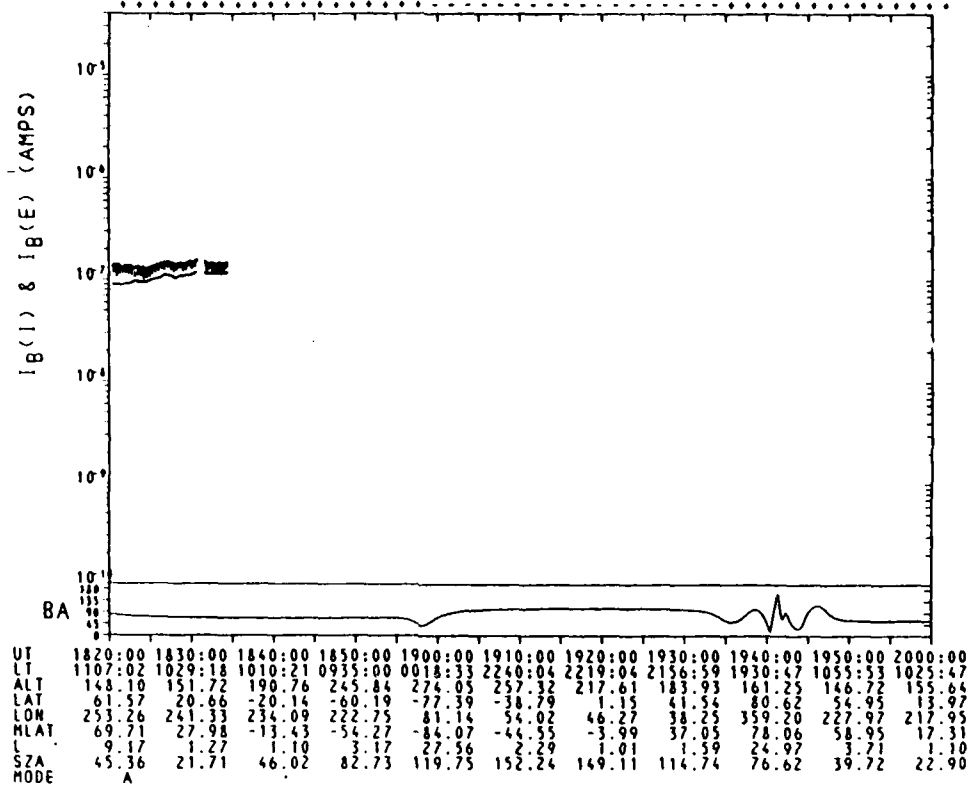


NRL 747

08/04/78

REV 2292

FORMAT A

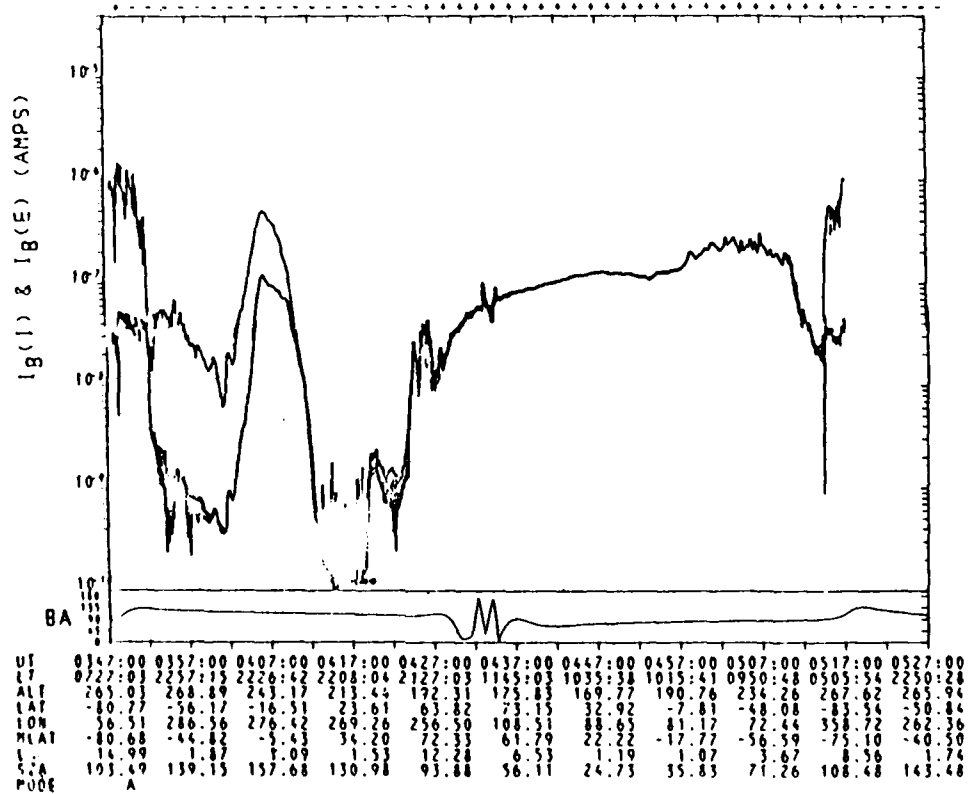


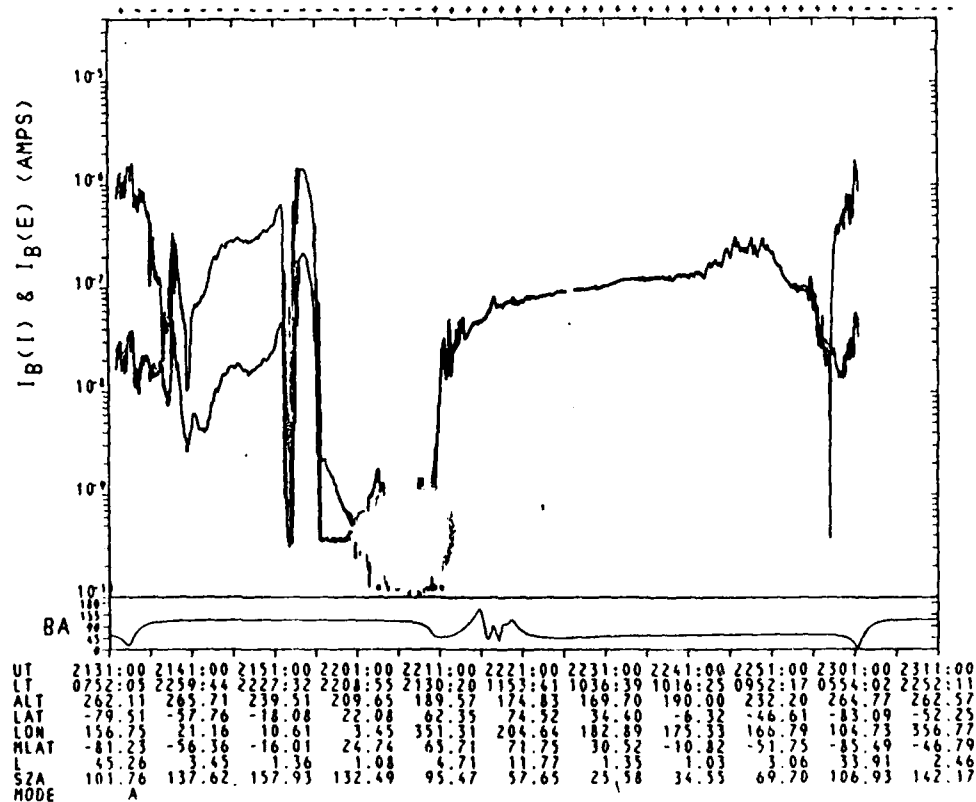
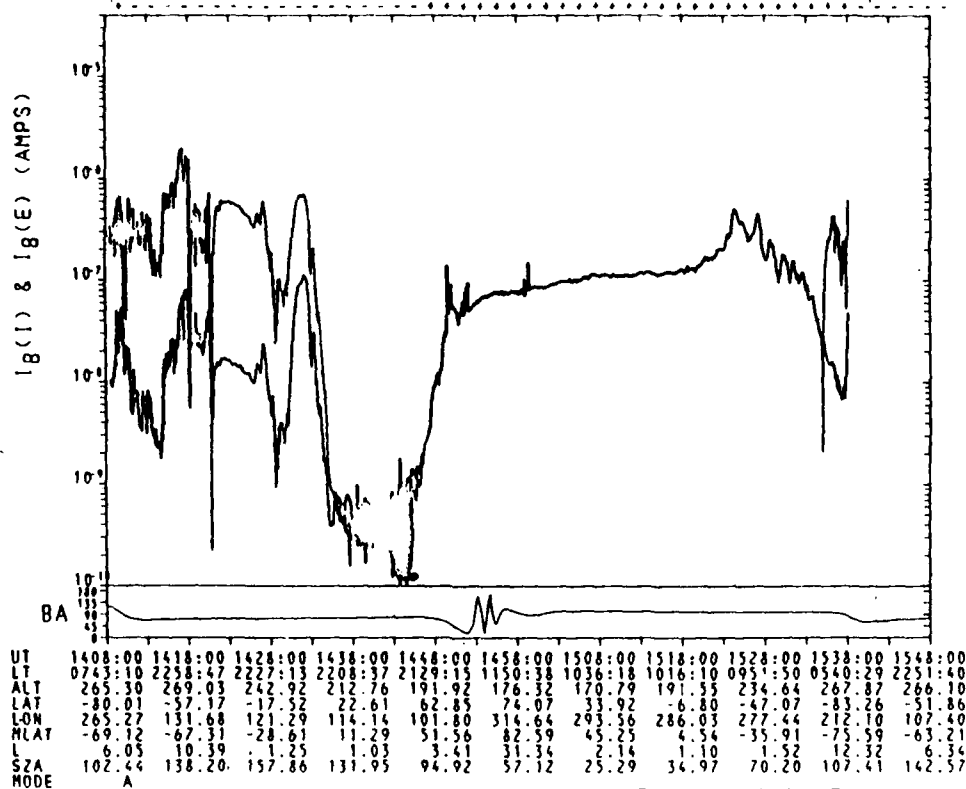
NRL 747

08/05/78

REV 2296

FORMAT A





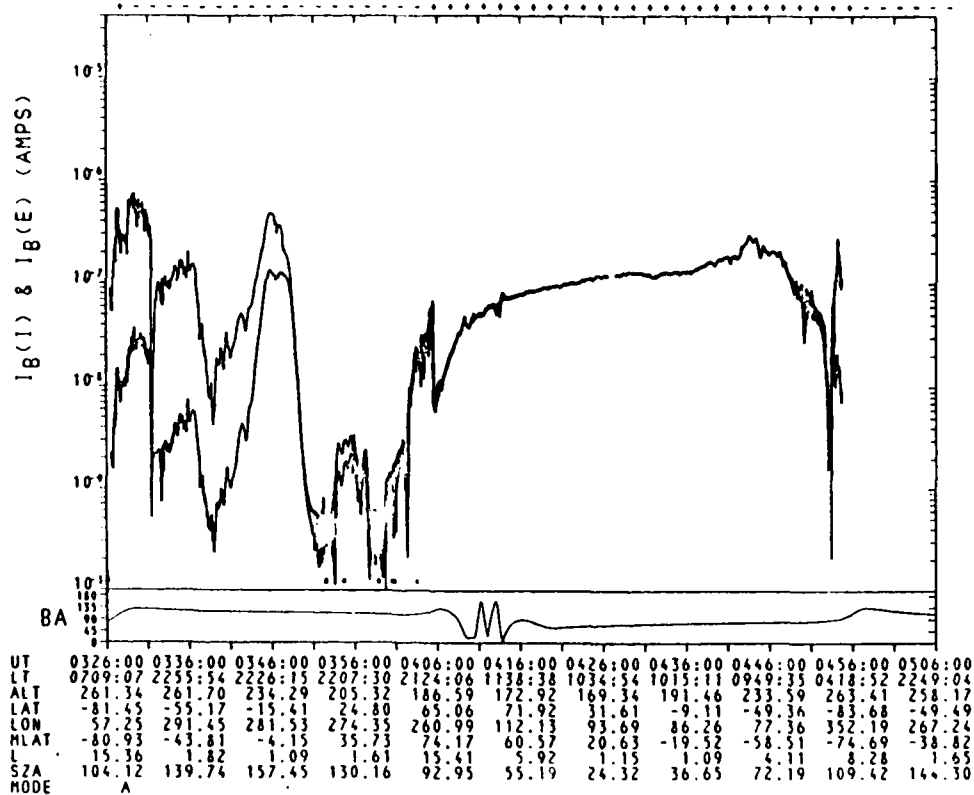


NRL 747

08/06/78

REV 2312

FORMAT A

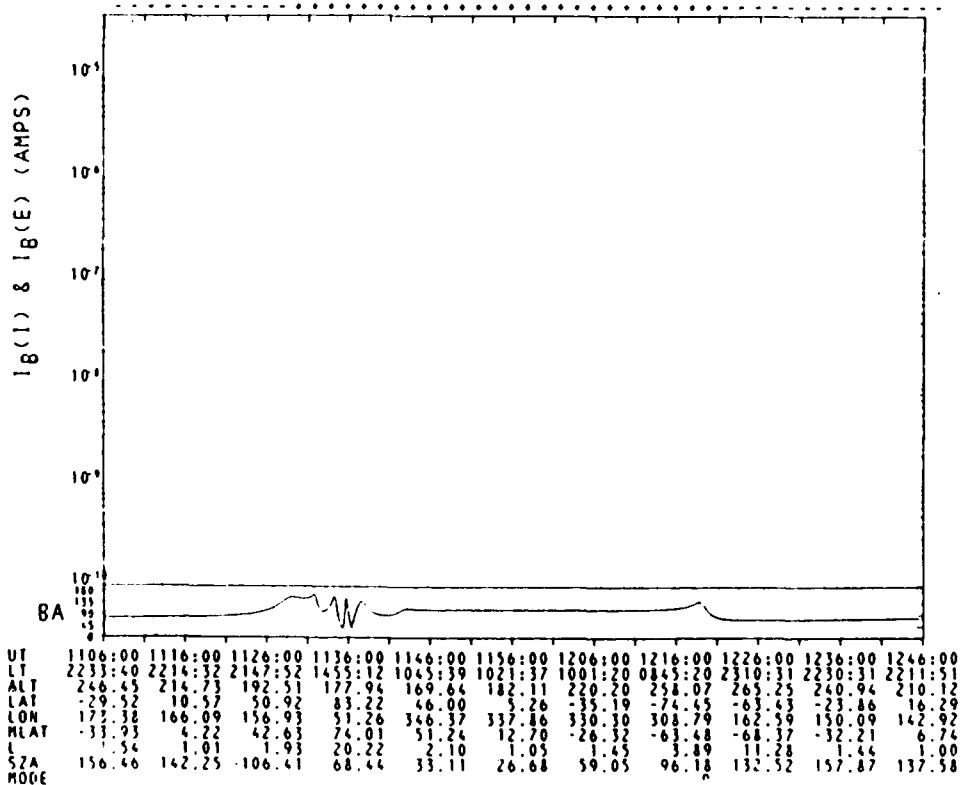


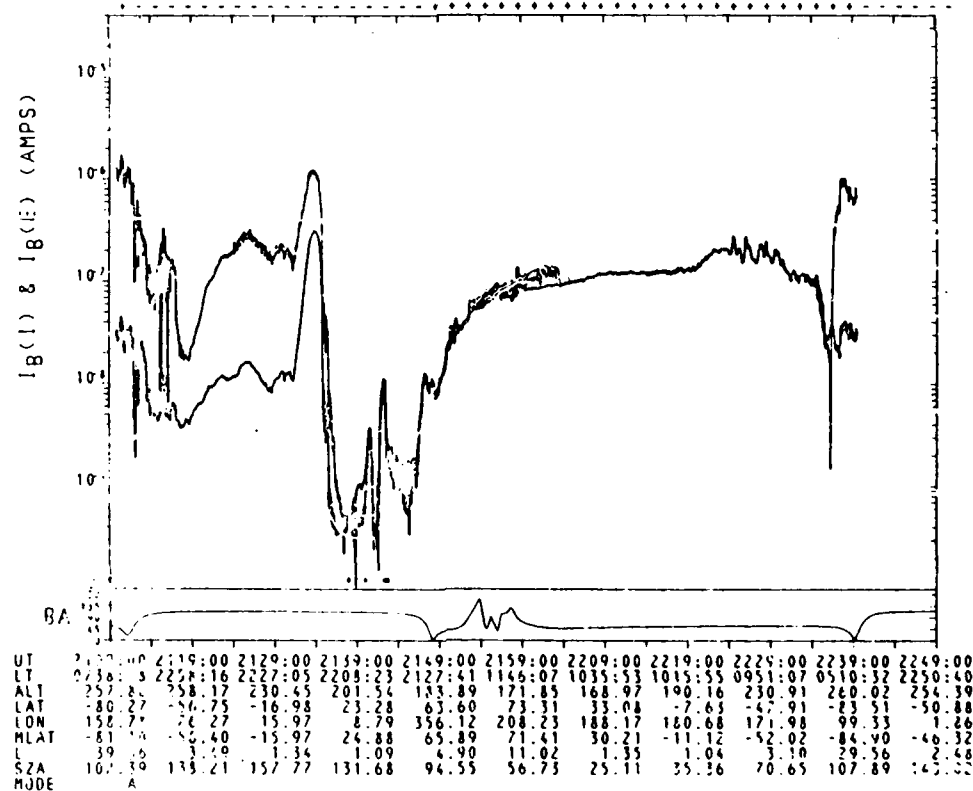
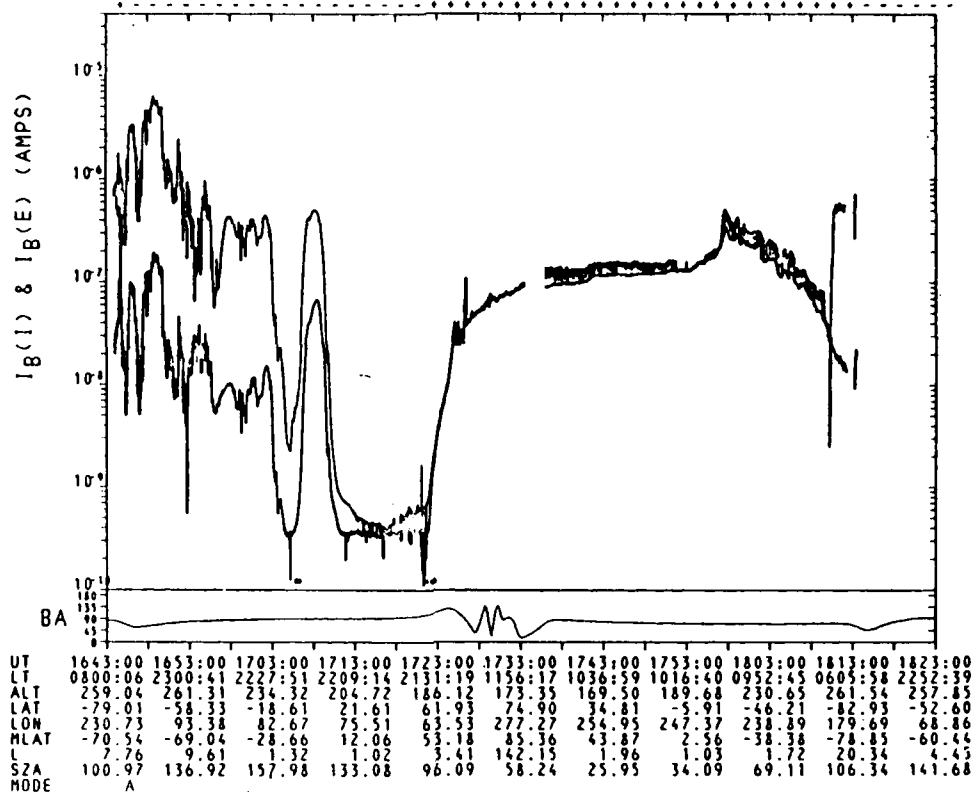
NRL 747

08/06/78

REV 2317

FORMAT C



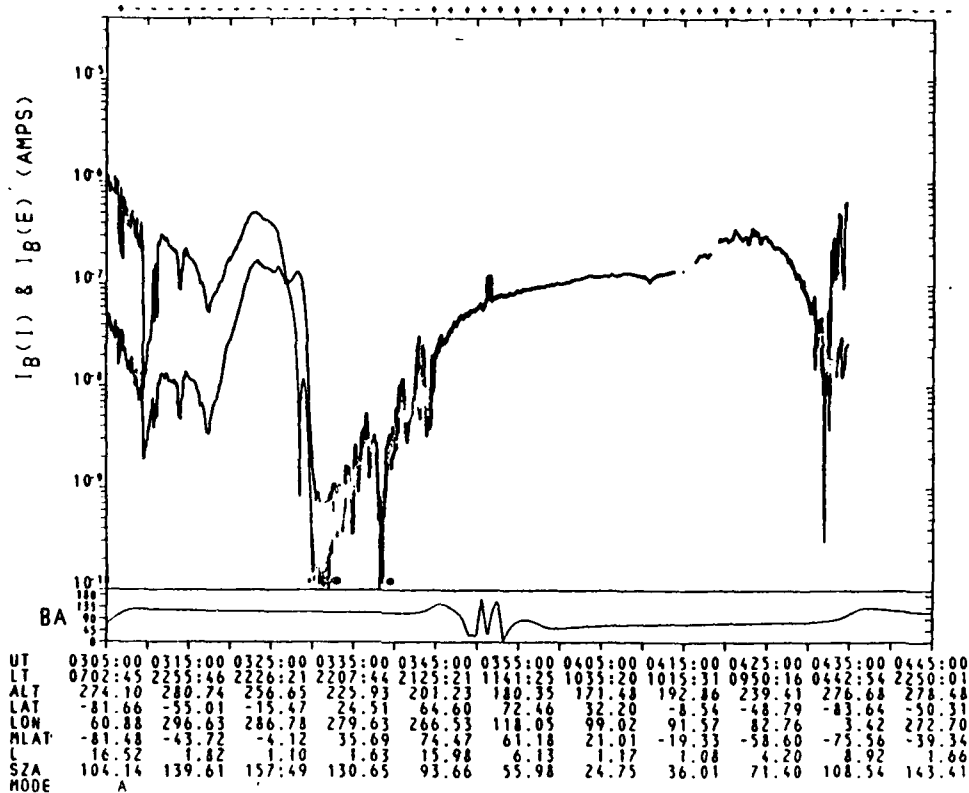


NRL 747

08/07/78

REV 2328

FORMAT A



NRL 747

08/07/78

REV 2332

FORMAT C

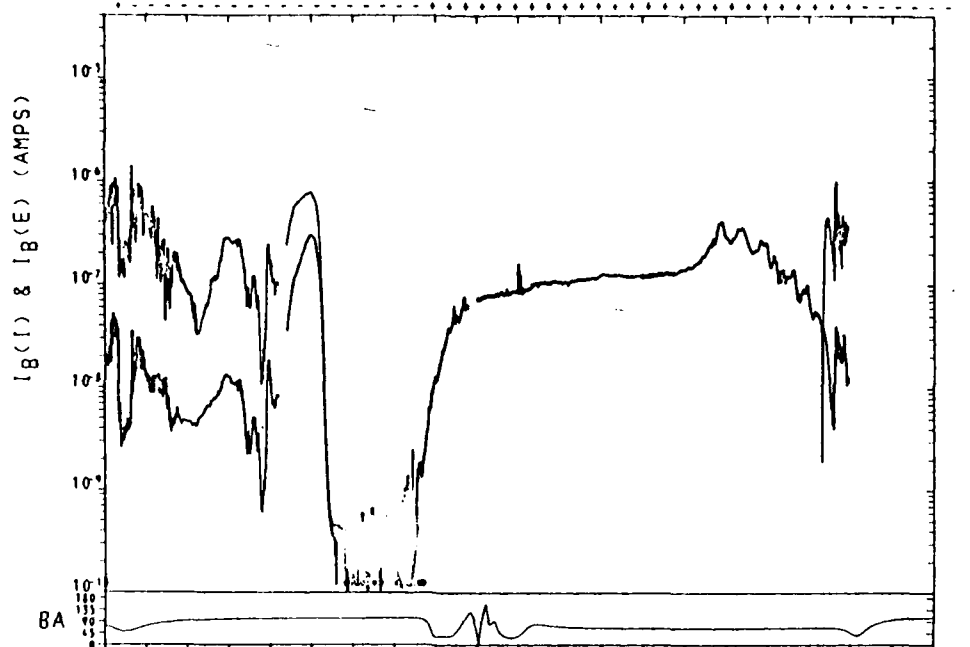
NOT CURRENTLY AVAILABLE

NRL 747

08/07/78

REV 2338

FORMAT A



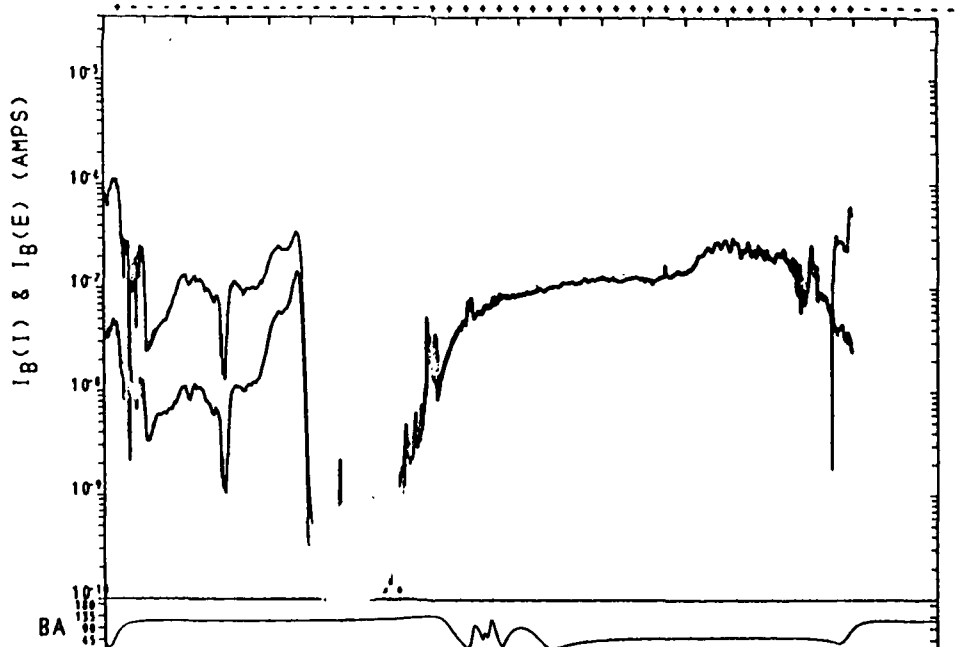
UT	1753:00	1803:00	1813:00	1823:00	1833:00	1843:00	1853:00	1903:00	1913:00	1923:00	1933:00
LT	0654:13	2255:14	2226:11	2207:30	2123:55	1938:27	1035:00	1013:17	0949:41	0419:53	2249:22
ALT	271.50	275.87	250.53	220.18	197.07	178.23	171.18	193.33	238.92	273.86	273.24
LAT	-81.92	-54.58	-14.98	25.07	65.19	71.86	31.96	-9.17	-49.40	-83.68	-49.64
LONG	196.73	74.48	64.72	57.55	44.15	255.29	236.92	229.50	220.59	135.64	-50.51
MLAT	-76.40	-63.21	-22.88	17.76	58.79	79.26	37.98	-3.36	-44.27	-83.67	-54.40
L	15.04	5.36	1.23	1.10	4.26	34.76	1.59	1.03	2.12	34.89	3.29
SZA	104.34	139.80	157.39	130.32	93.26	55.58	24.57	36.37	71.81	108.95	143.78
MODE	A										

NRL 747

08/07/78

REV 2342

FORMAT A



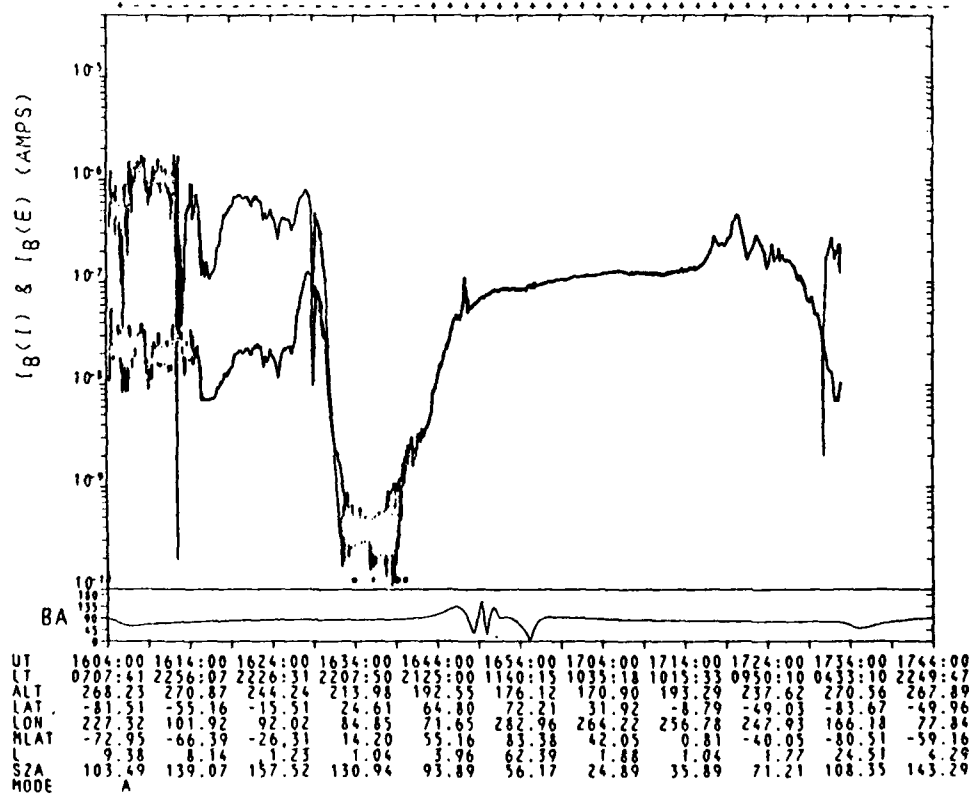
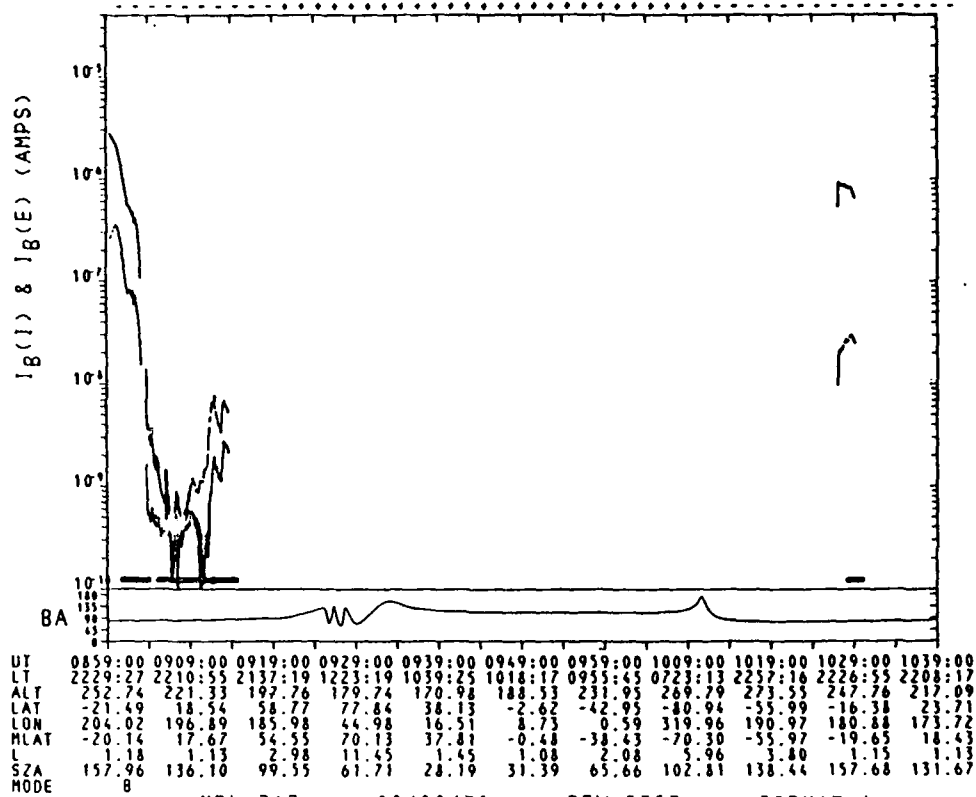
UT	2348:00	2358:00	0008:00	0018:00	0028:00	0038:00	0048:00	0058:00	0108:00	0118:00	0128:00
LT	0646:51	2254:50	2226:01	2207:15	2122:25	1934:58	1034:17	1014:37	0948:05	0329:54	2247:42
ALT	269.72	273.11	243.88	209.01	182.12	159.47	150.54	176.72	230.78	271.59	270.23
LAT	-82.11	-54.25	-11.62	25.49	65.74	71.12	30.55	-10.37	-50.71	-83.33	-41.25
LONG	106.13	345.63	333.92	328.73	315.02	165.66	147.99	140.57	131.44	34.59	321.34
MLAT	-86.49	-47.03	-6.68	34.01	75.19	63.17	21.45	-20.01	-60.98	-78.50	-38.33
L	40.95	2.35	1.18	1.30	10.88	5.80	1.16	1.10	5.55	11.73	1.71
SZA	104.56	140.01	157.31	130.00	92.80	54.95	24.20	37.29	72.98	110.16	144.78
MODE	A										

NRL 747

08/08/78

REV 2348

FORMAT C

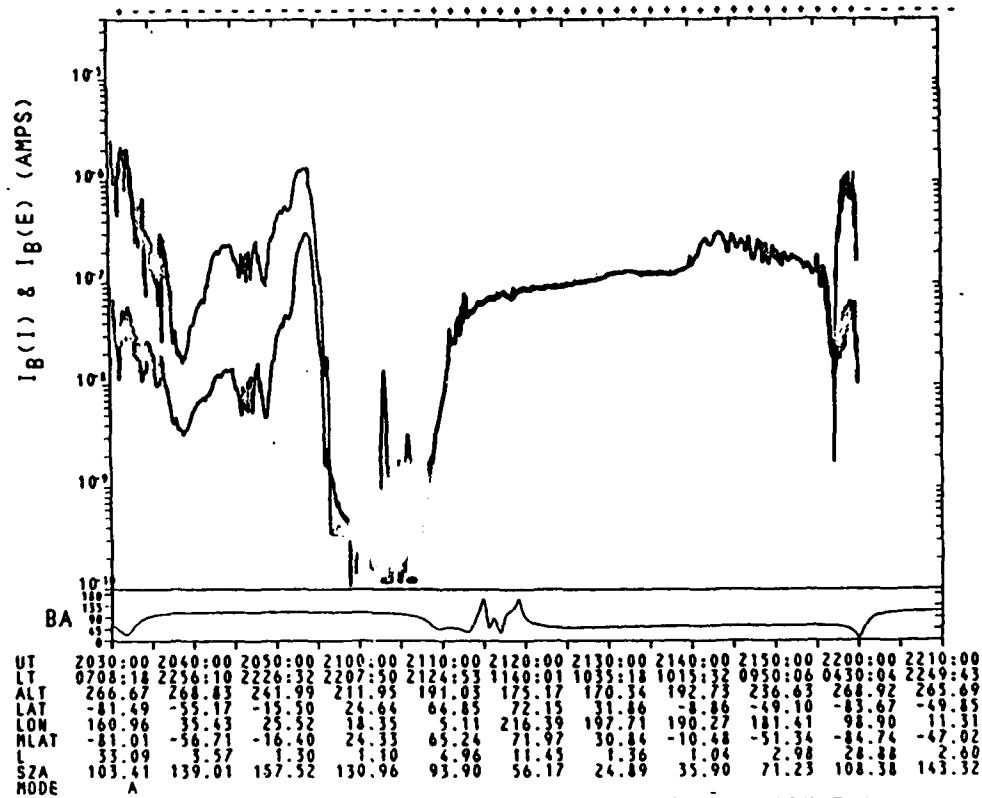


NRL 747

08/08/78

REV 2356

FORMAT A

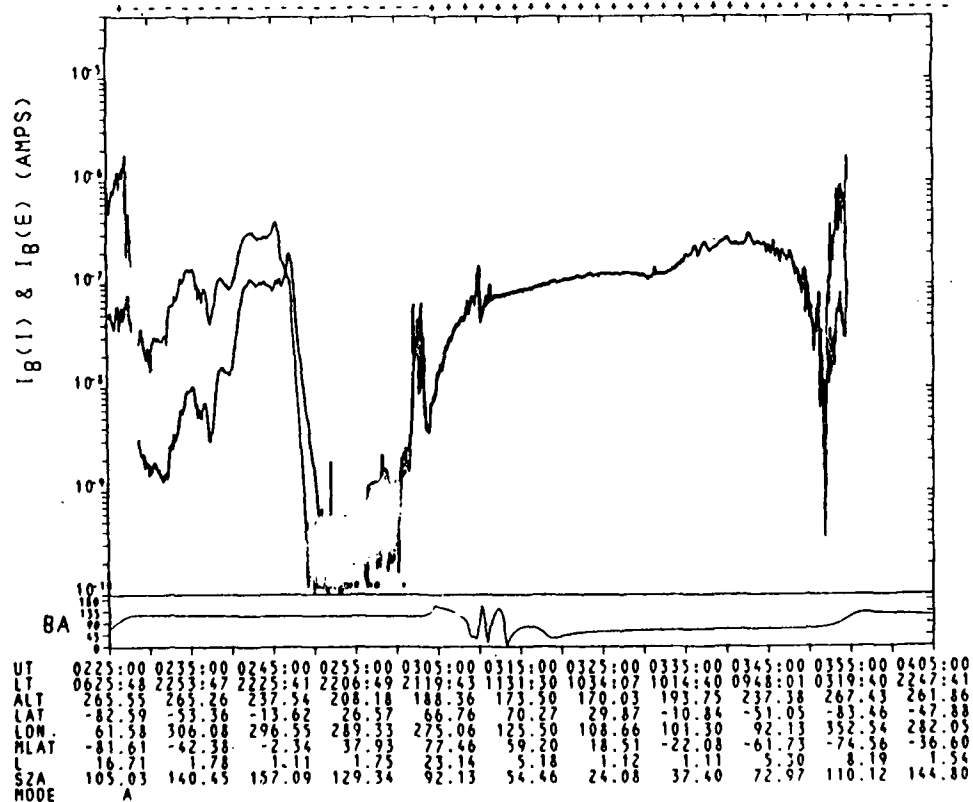


NRL 747

08/09/78

REV 2360

FORMAT A

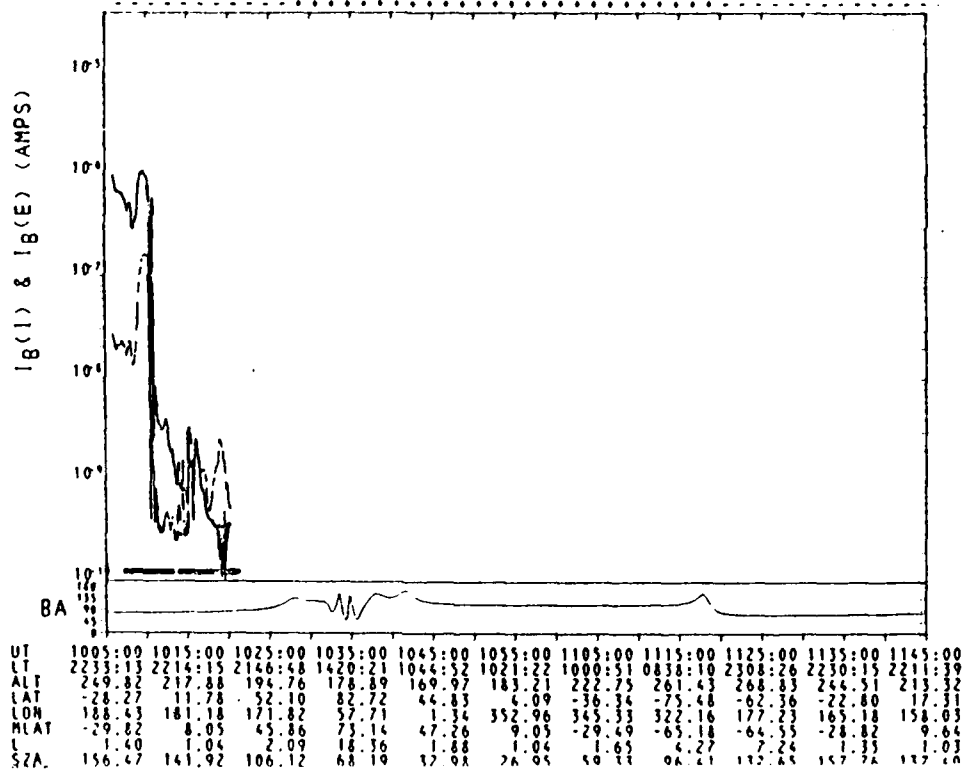


NRL 747

08/09/78

REV 2365

FORMAT C

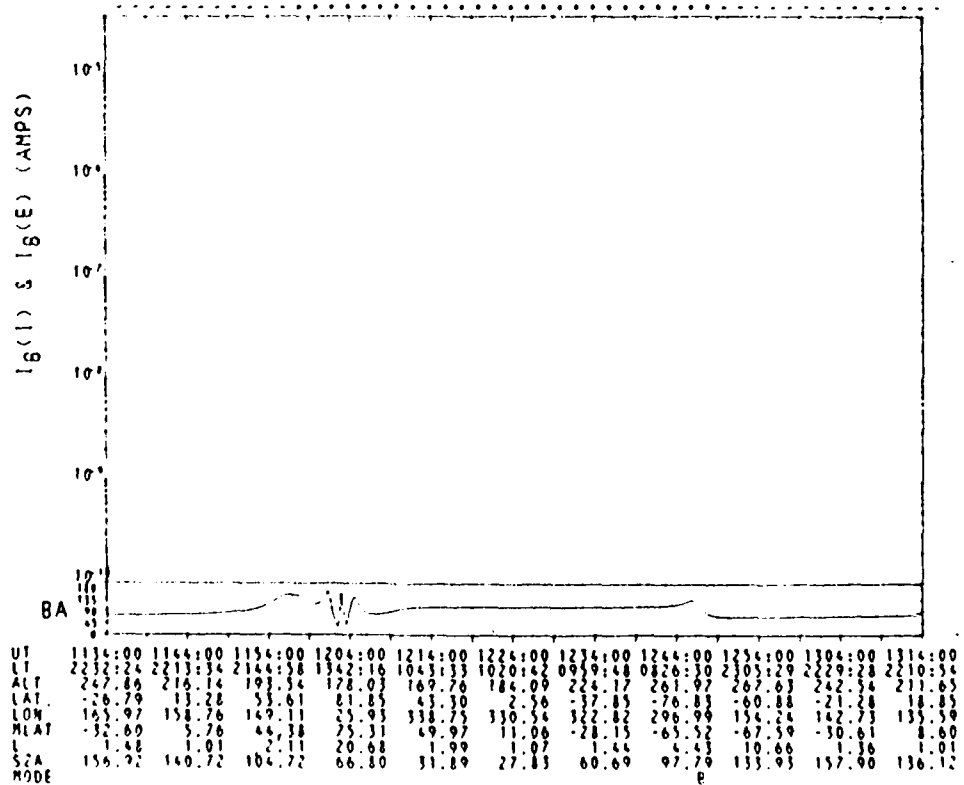


NRL 747

08/09/78

REV 2366

FORMAT C

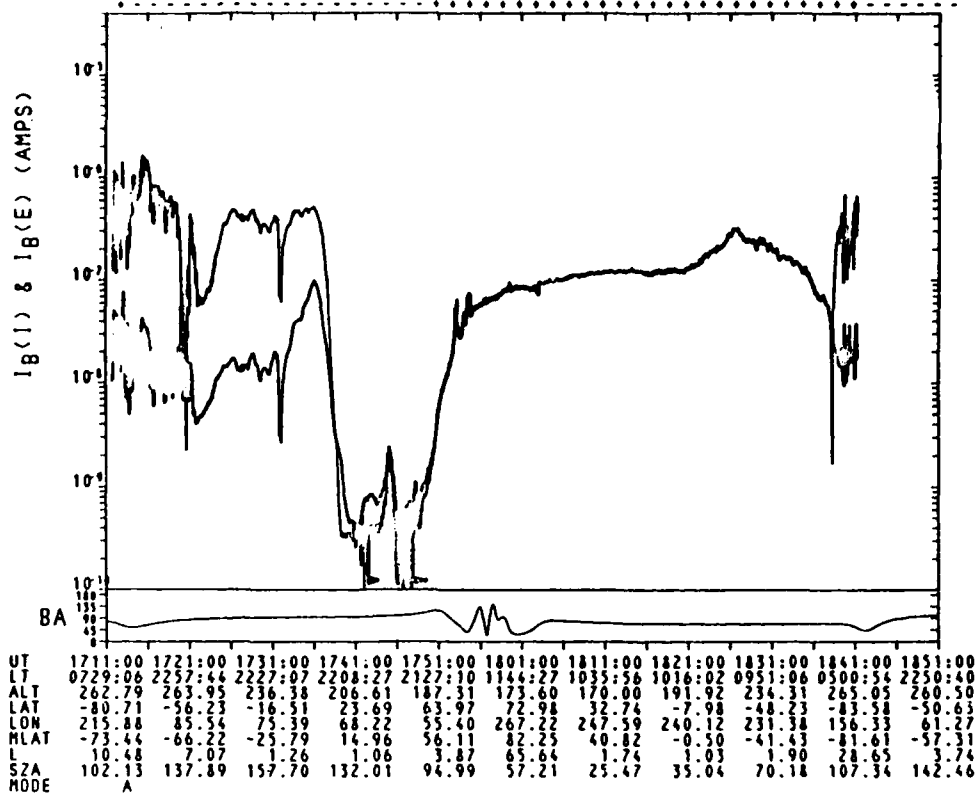


NRL 747

08/09/78

REV 2370

FORMAT A

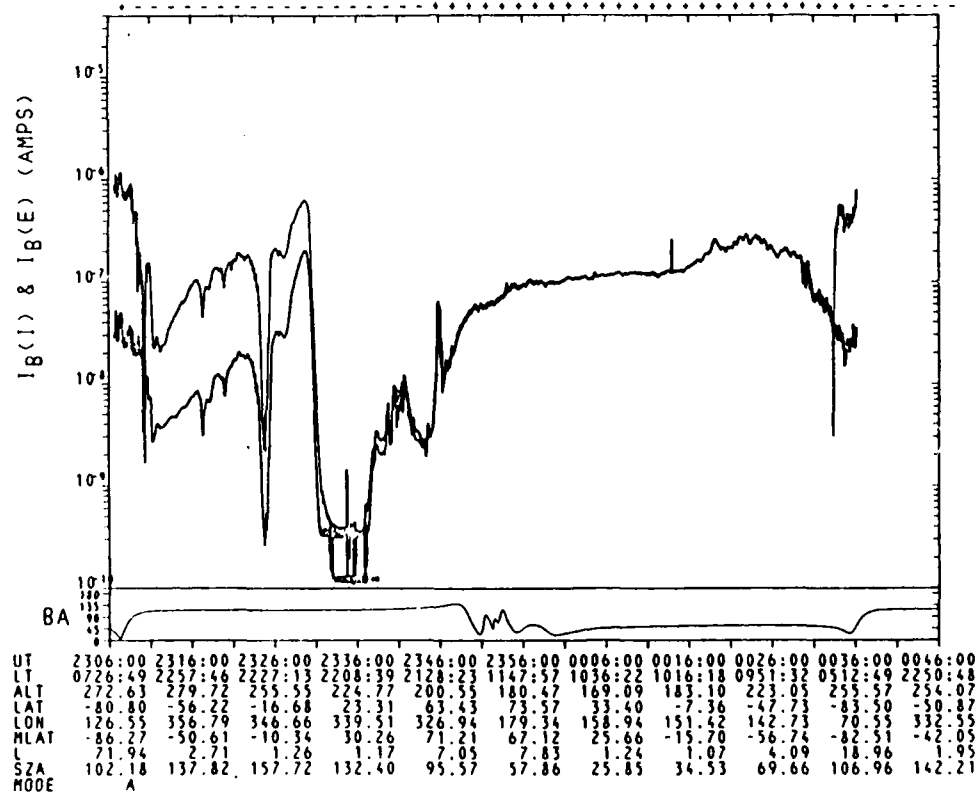


NRL 747

08/09/78

REV 2374

FORMAT A



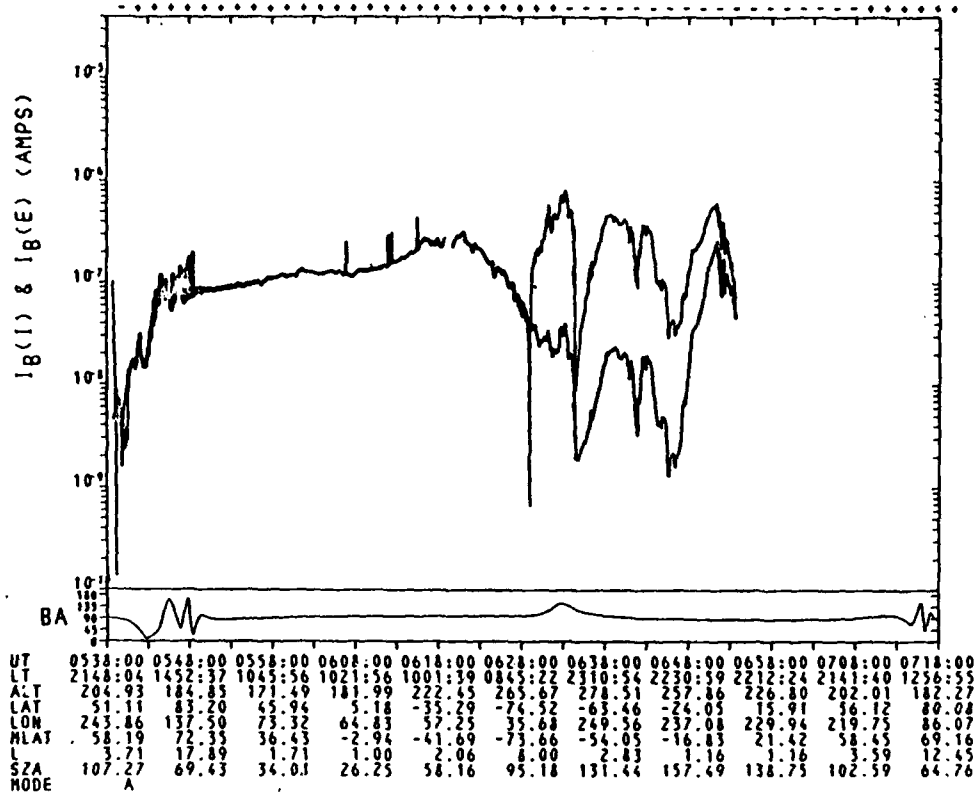


NRL 747

08/10/78

REV 2379

FORMAT A

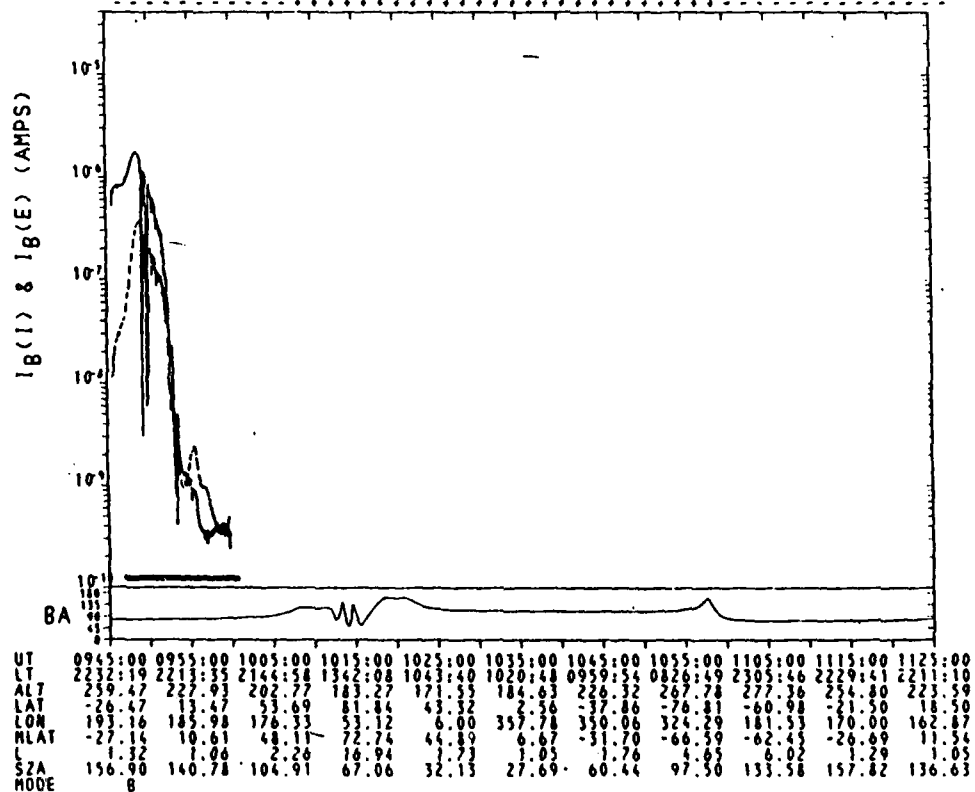


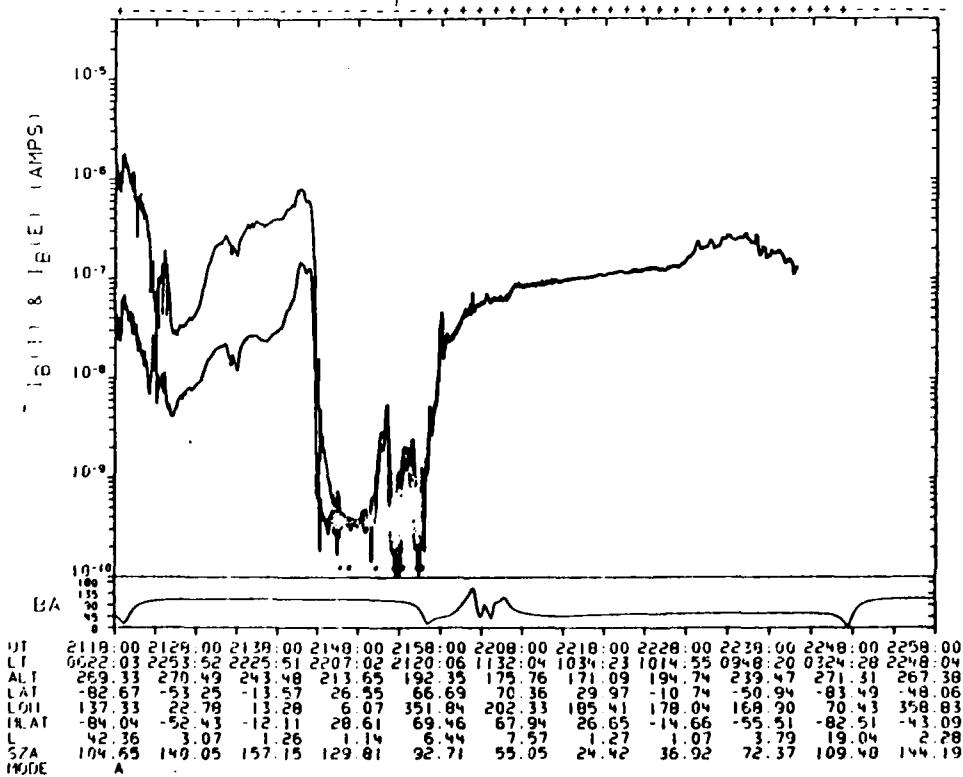
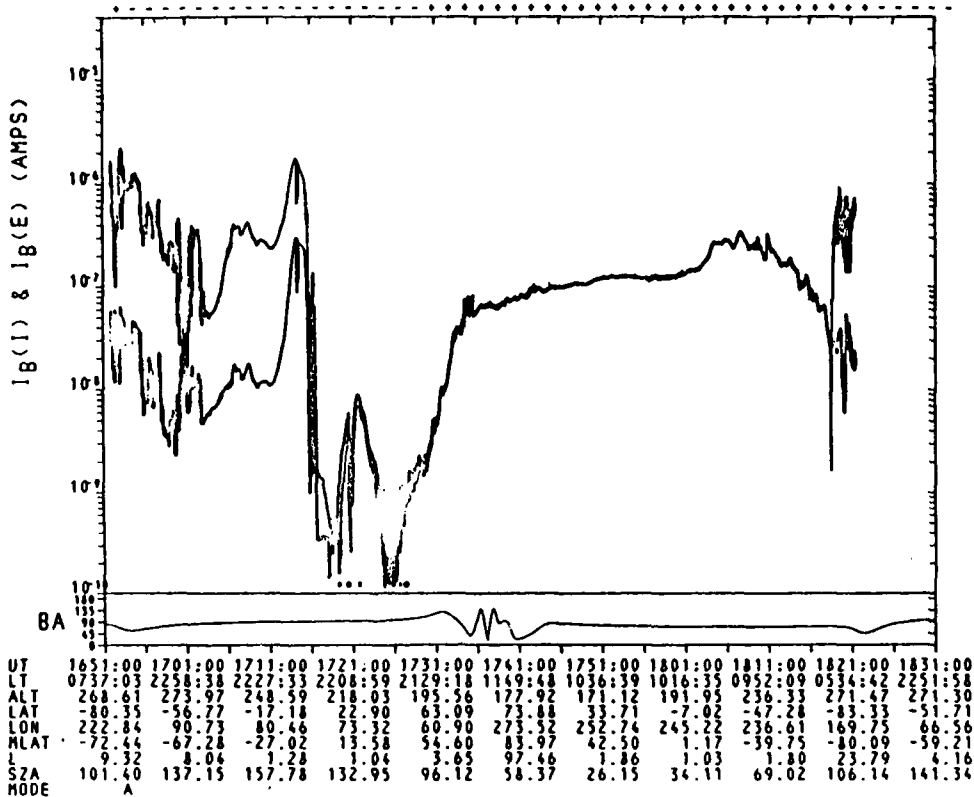
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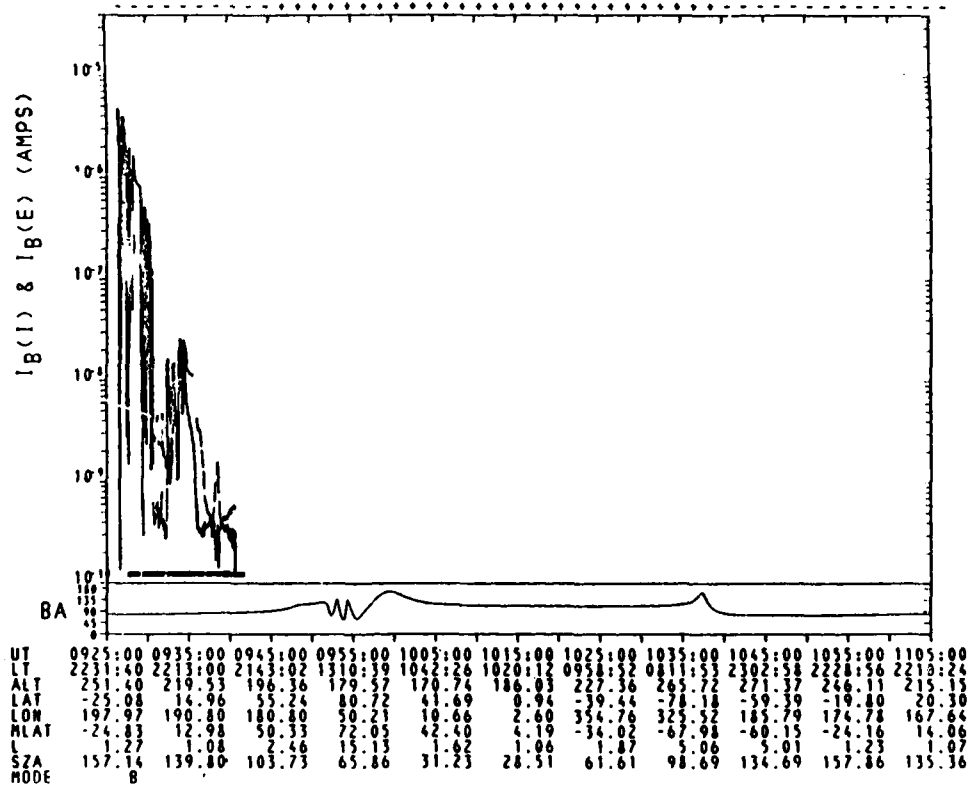
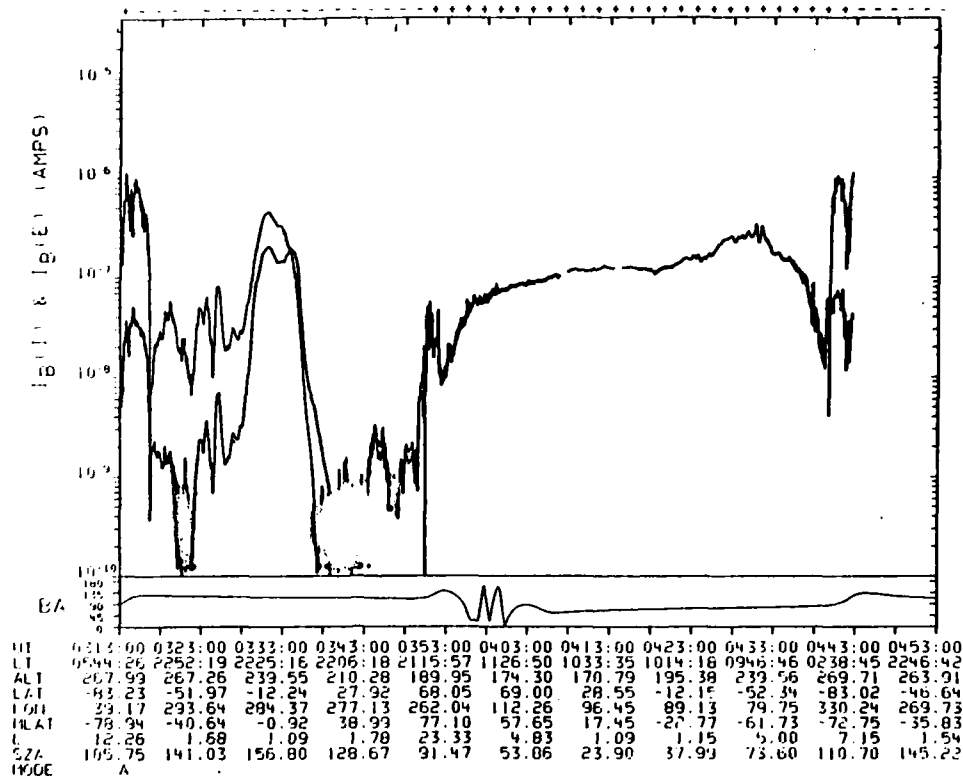
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REV 2381

FORMAT C





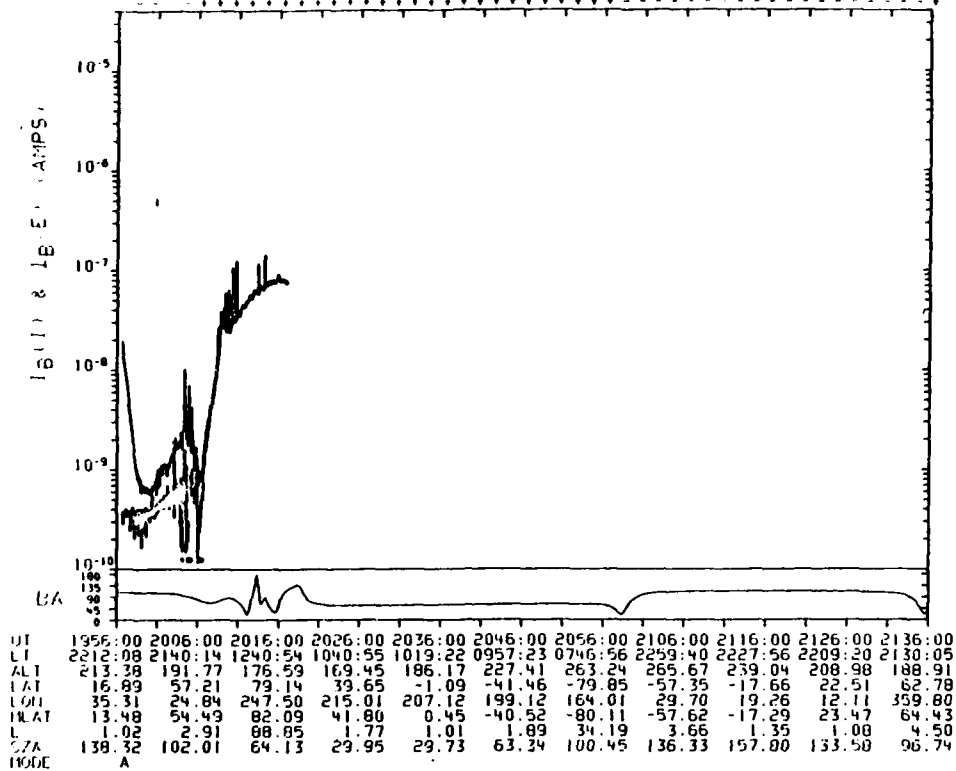


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08/11/78

REV 2405

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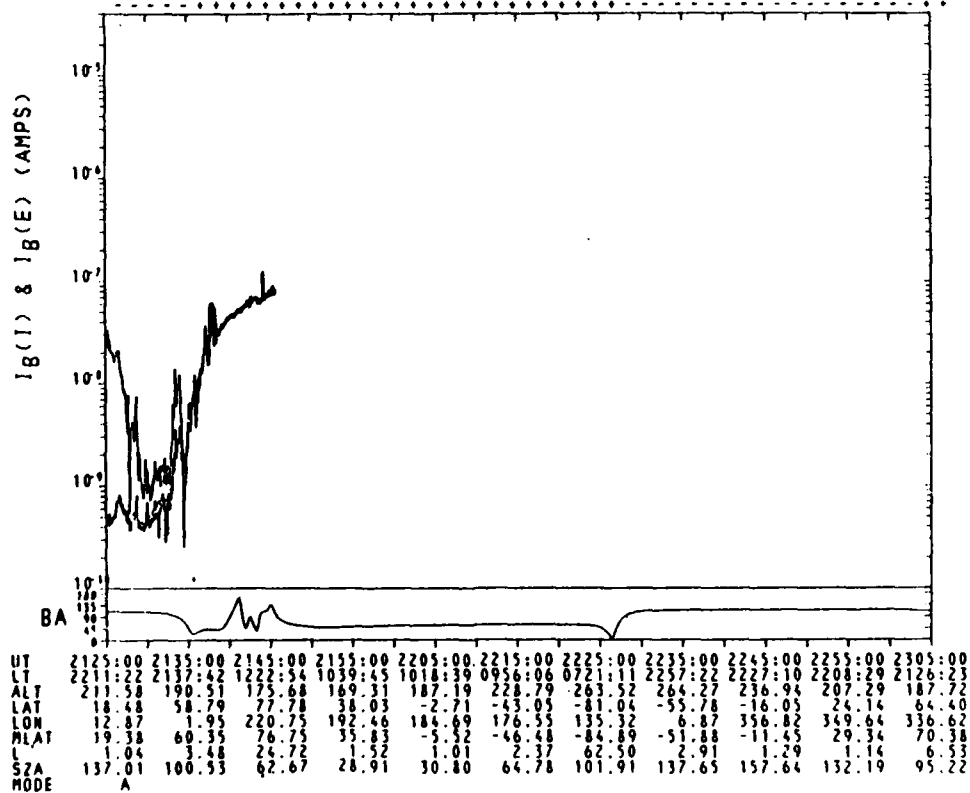


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08/11/78

REV 2406

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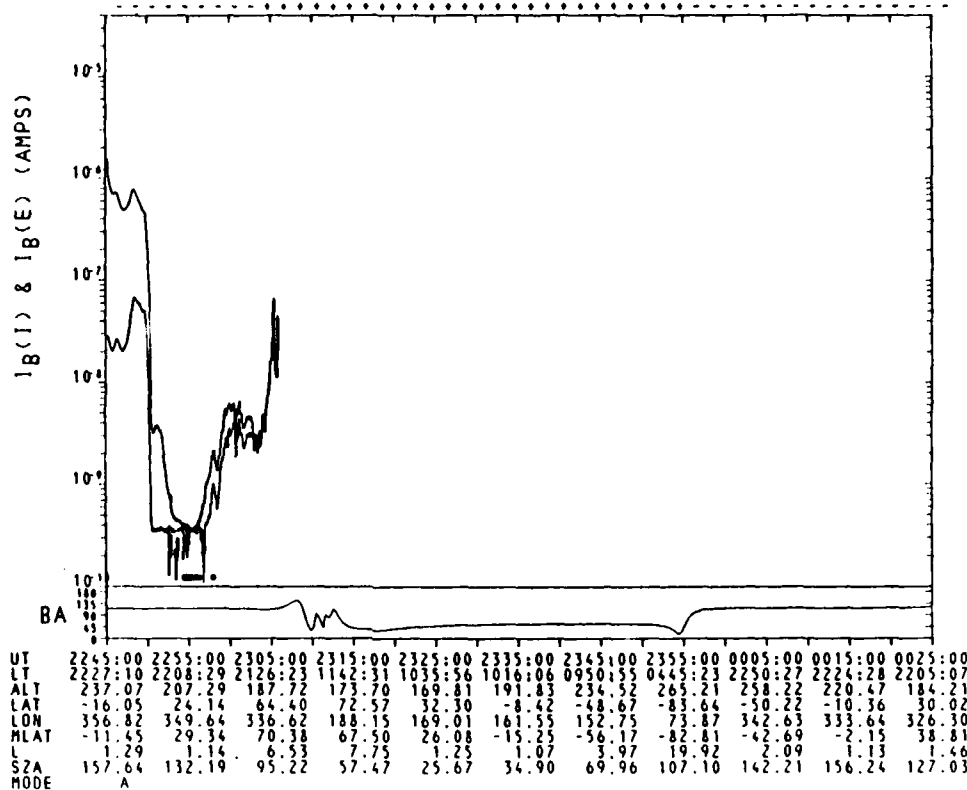


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08/11/78

REV 2407

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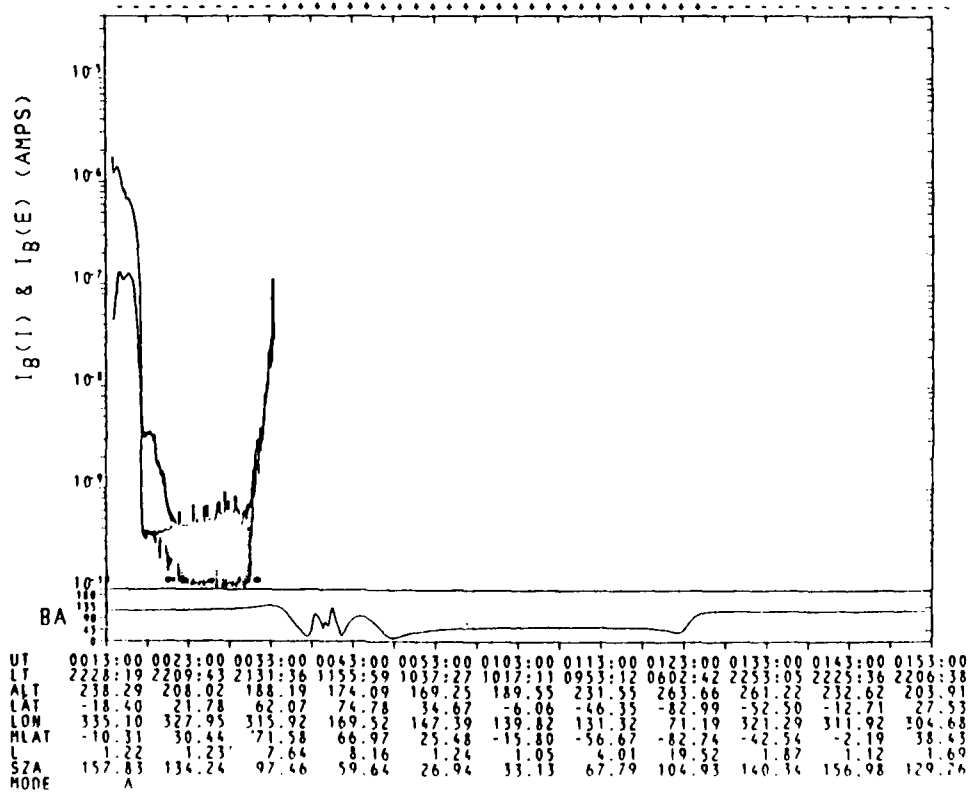


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08/12/78

REV 2408

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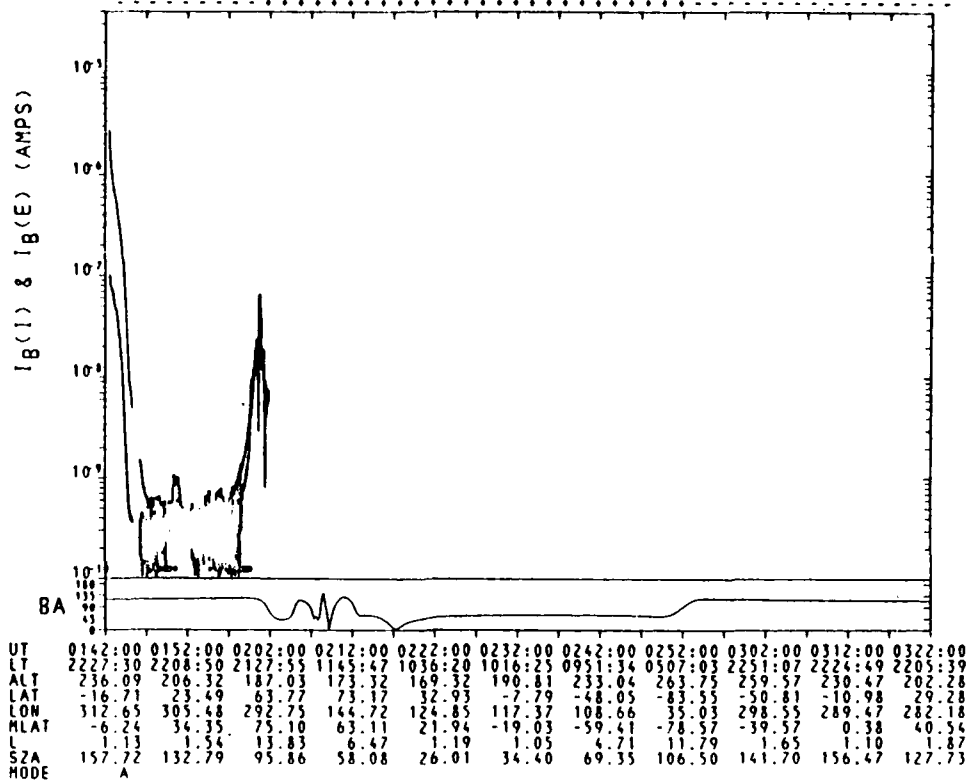


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08/12/78

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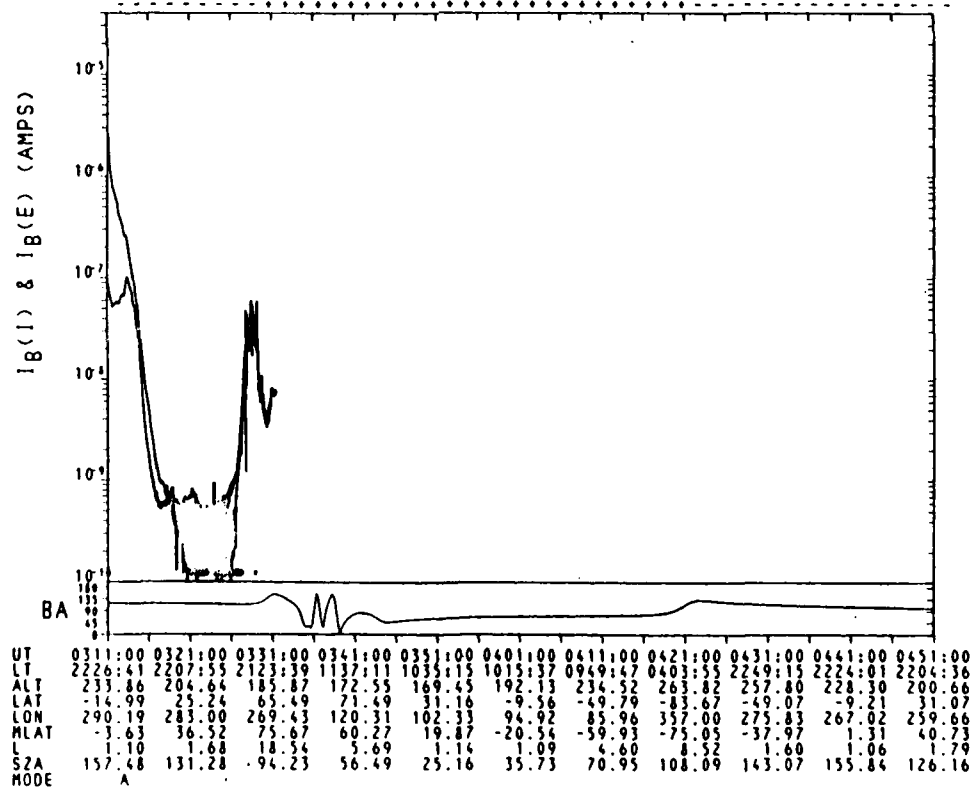


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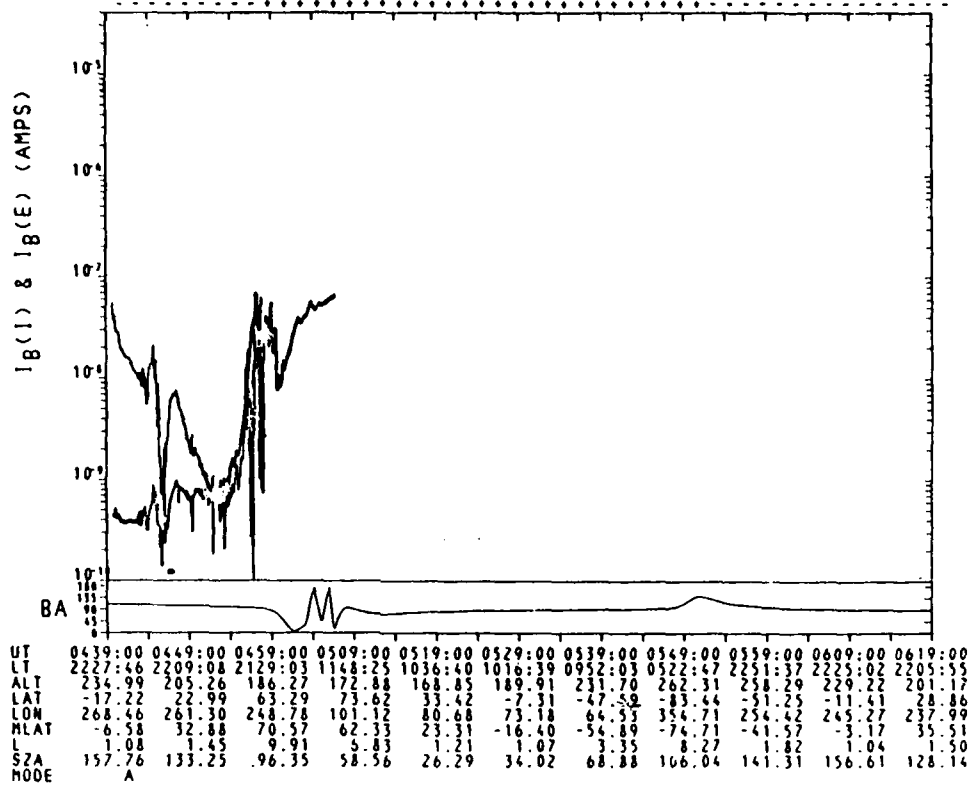


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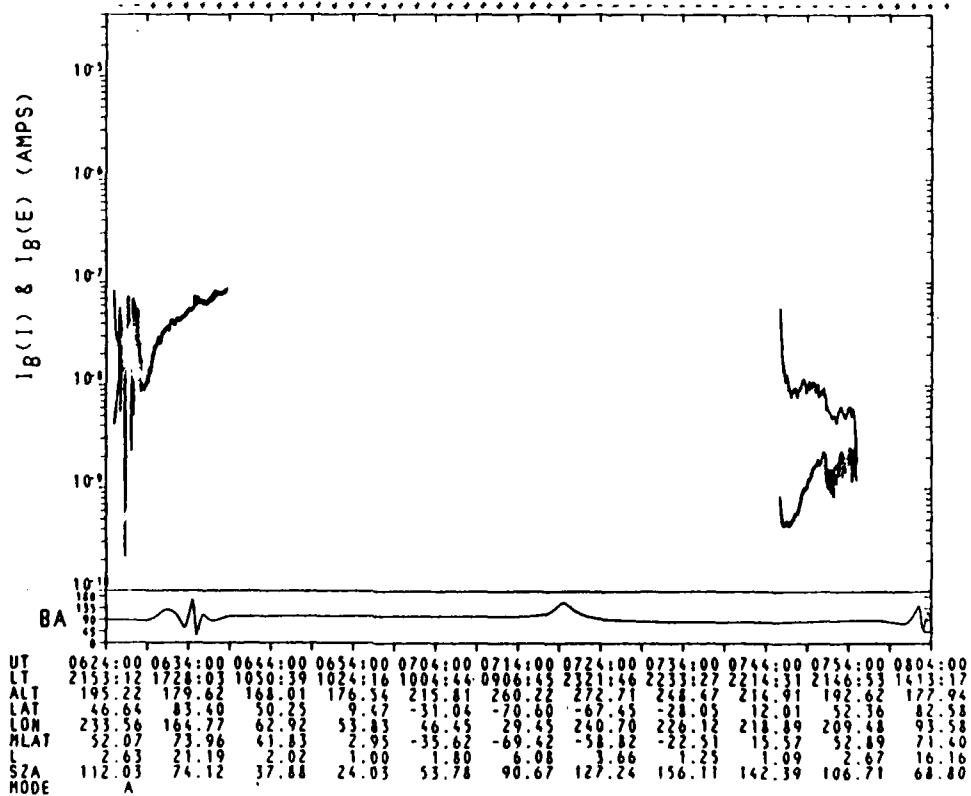


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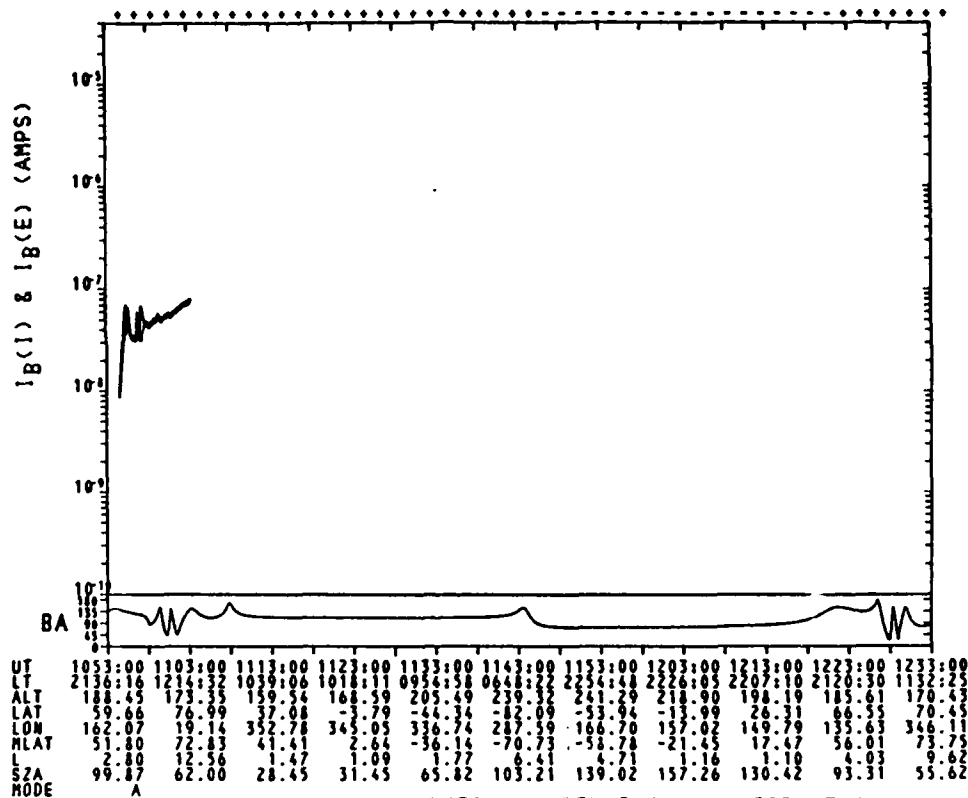


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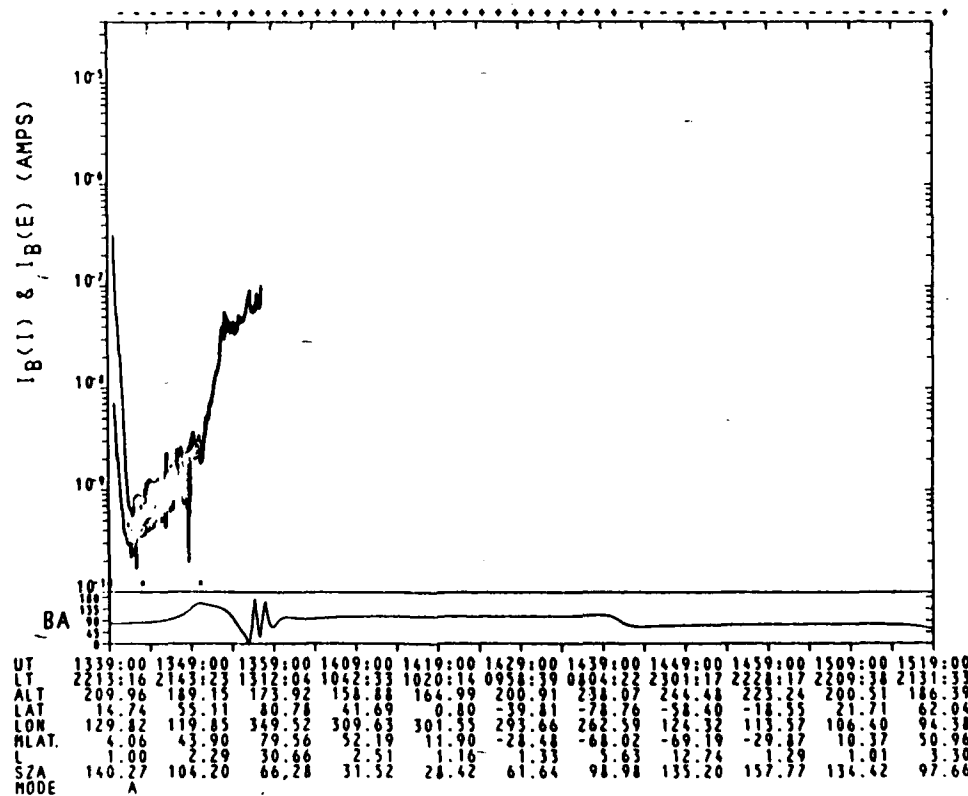


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08/12/78

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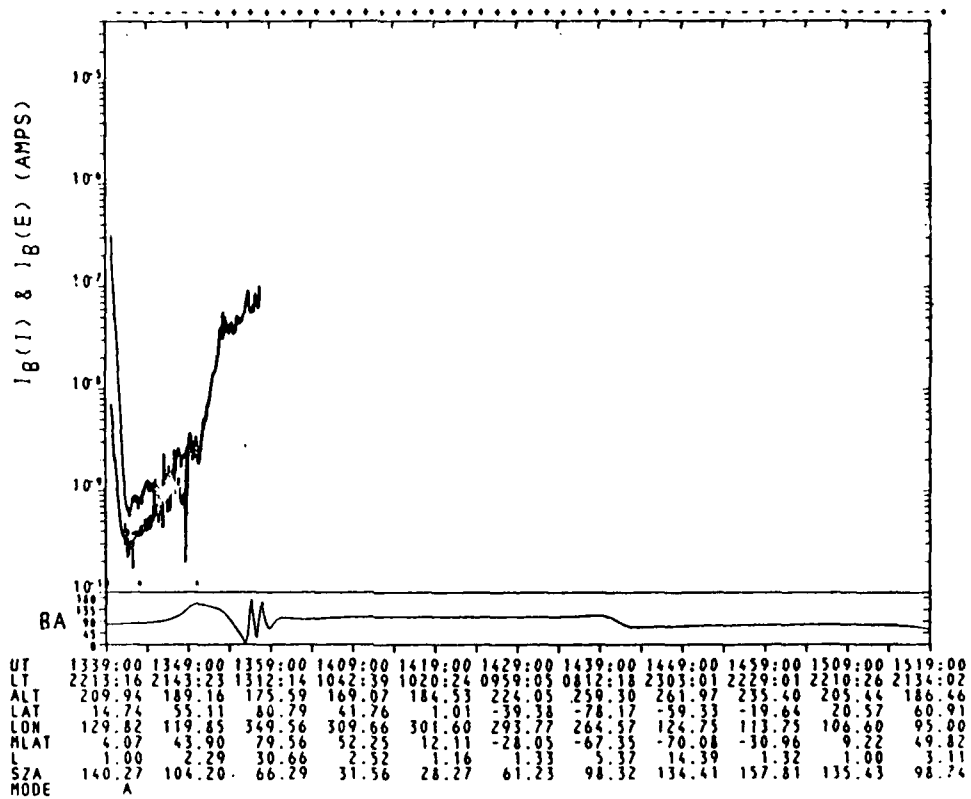


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08/12/78

REV 2417

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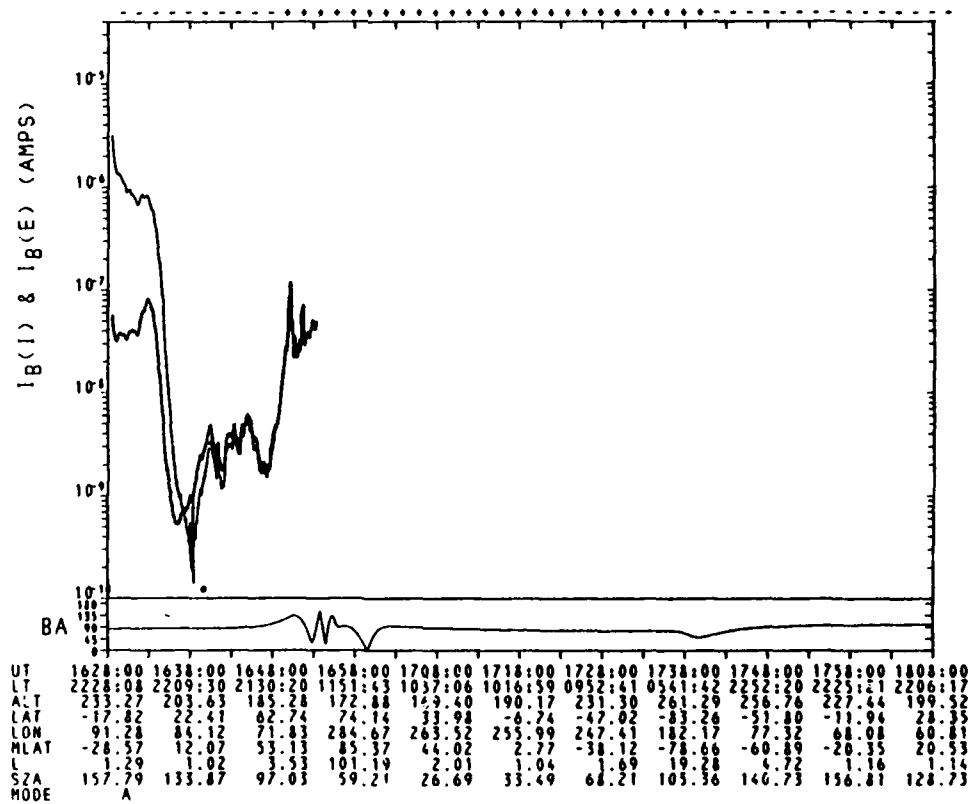


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08/12/78

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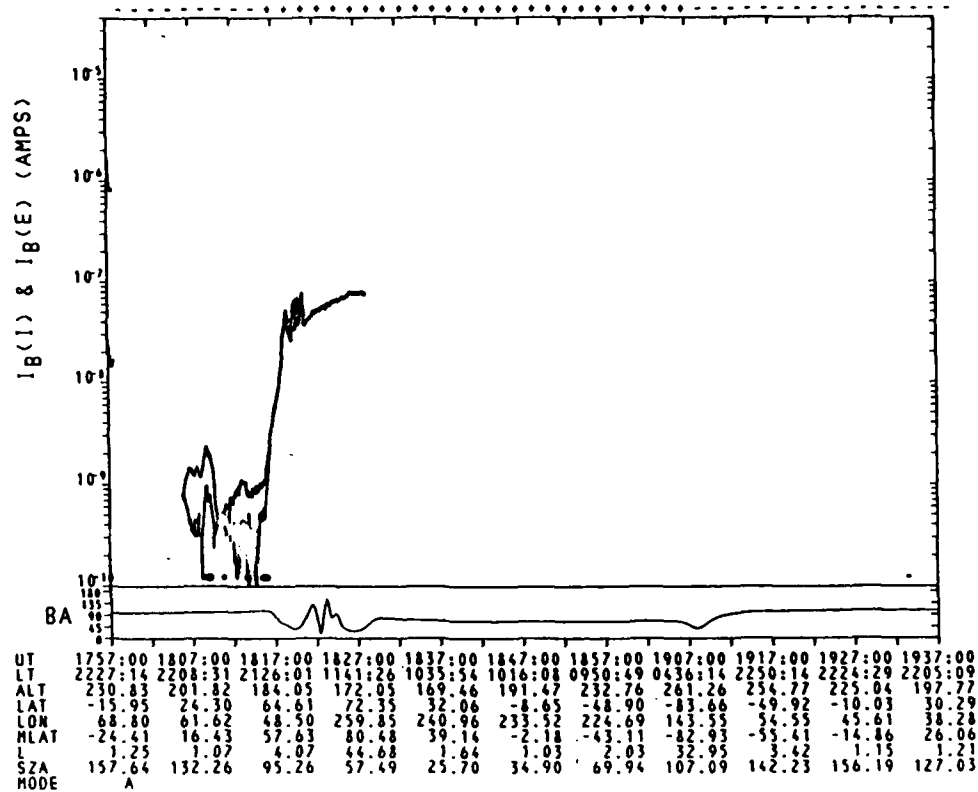


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08/12/78

REV 2420

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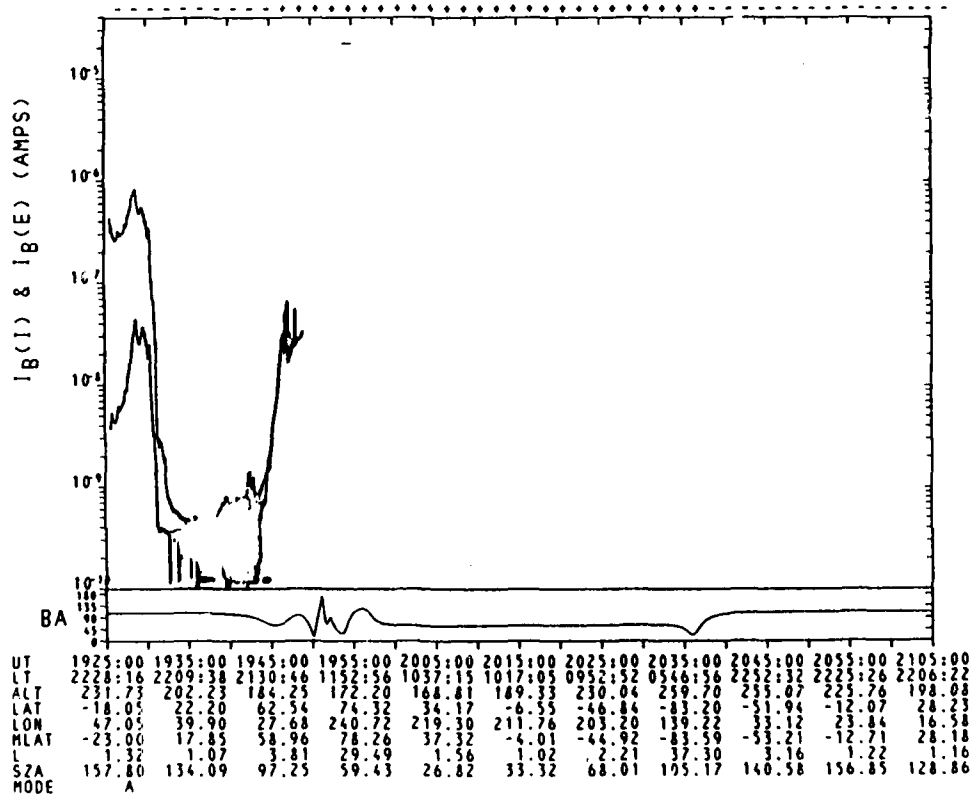


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08/12/78

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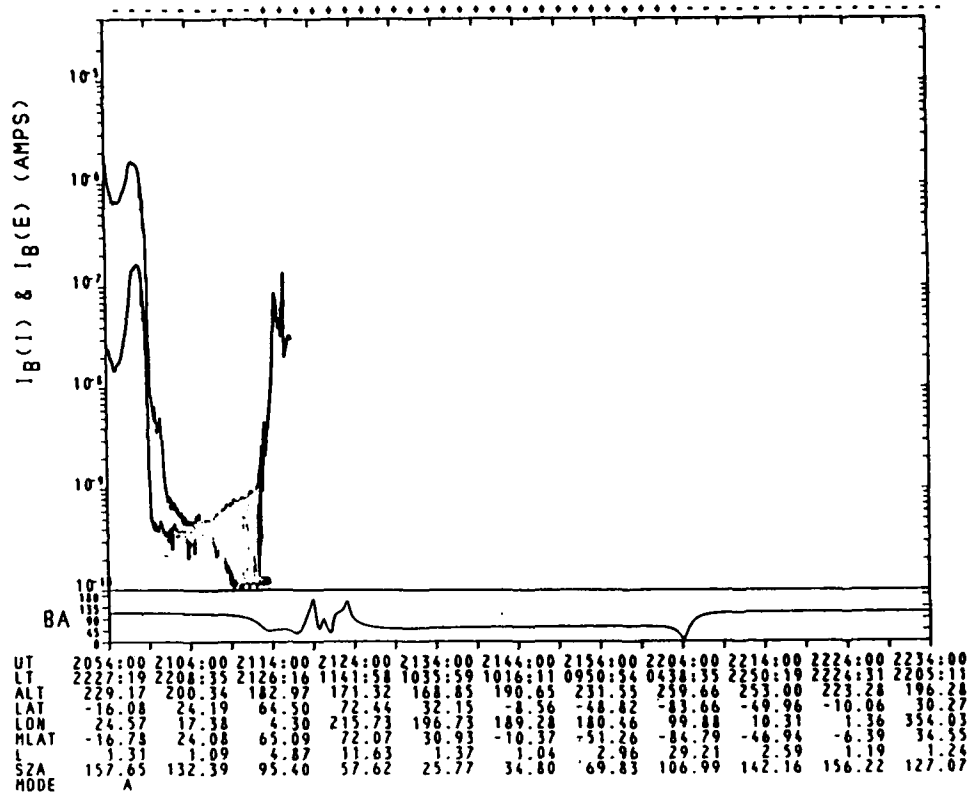


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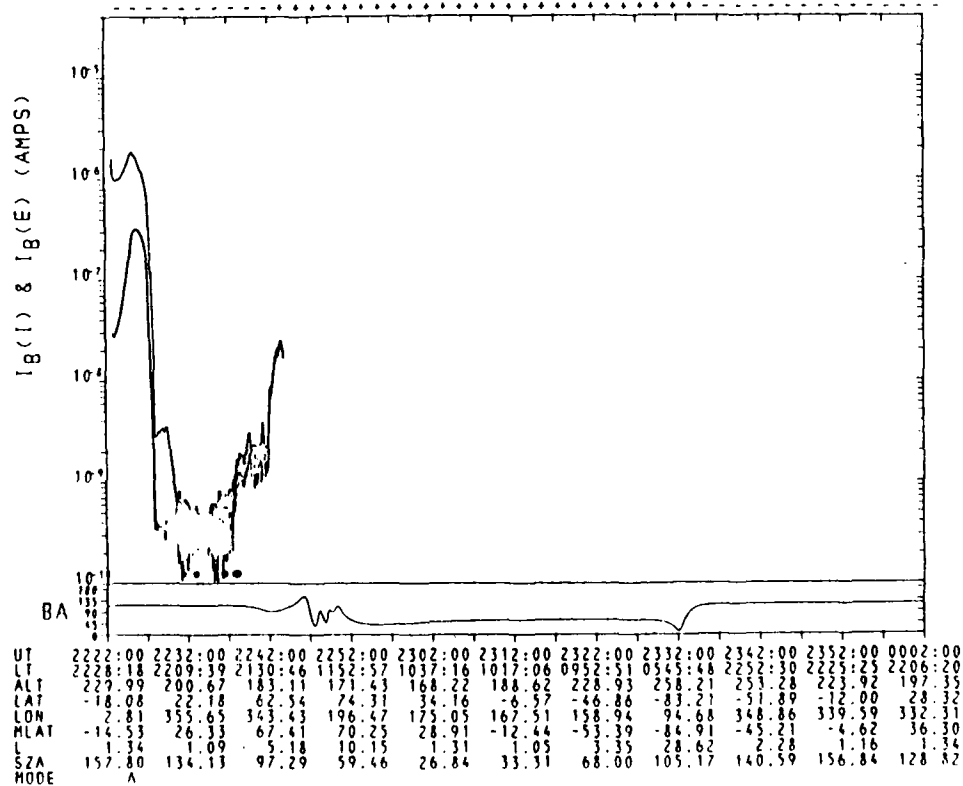


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REV 2423

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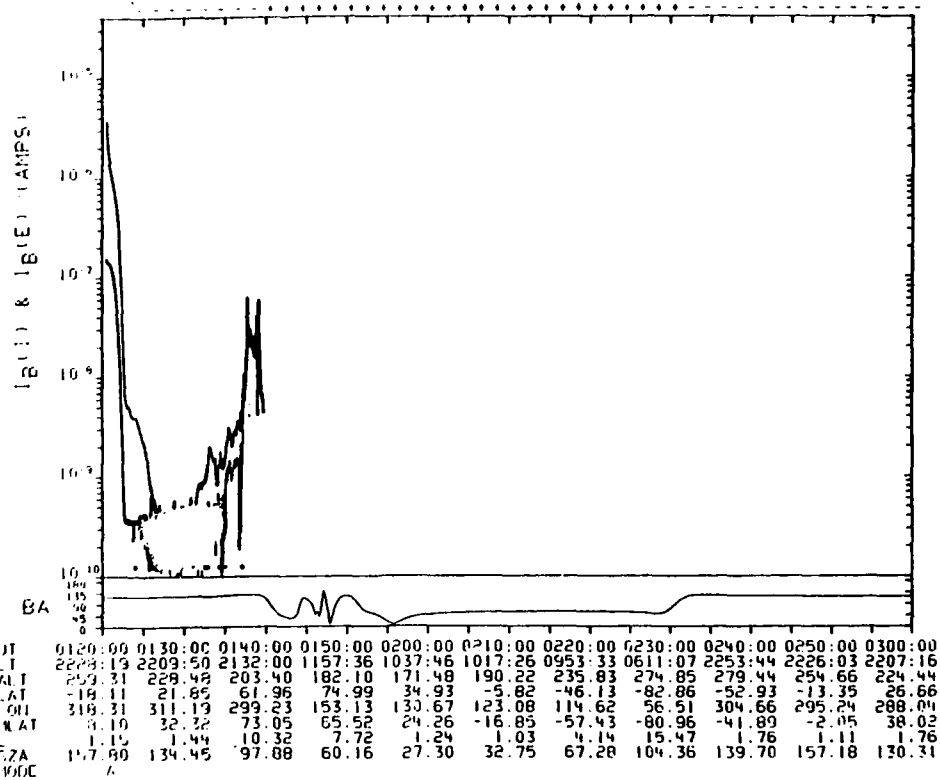


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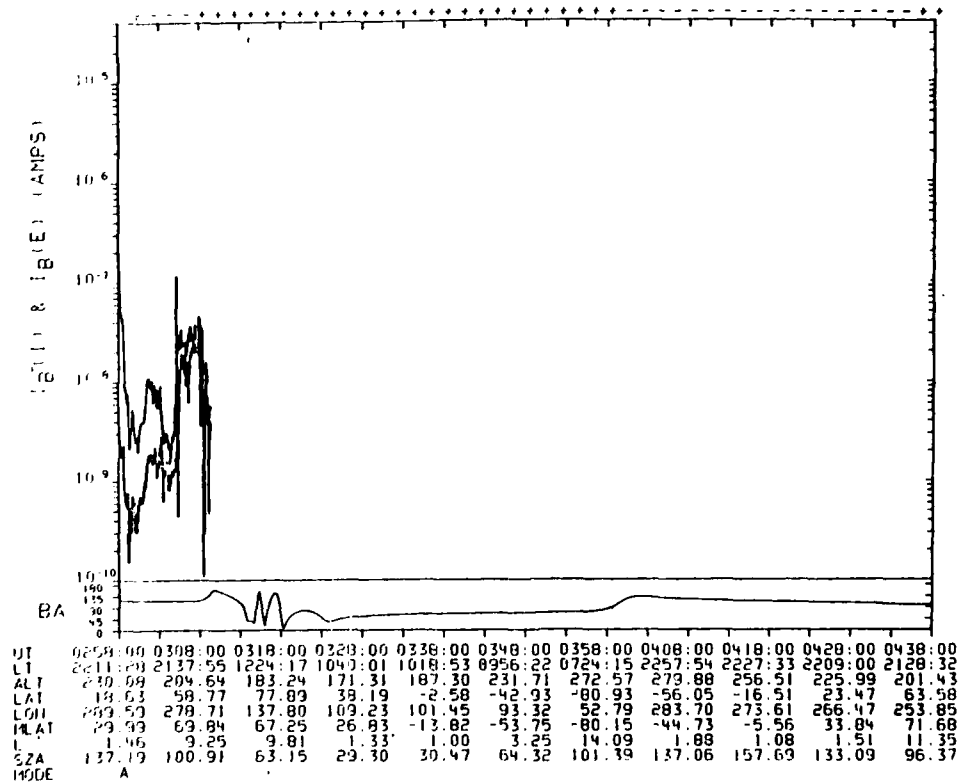


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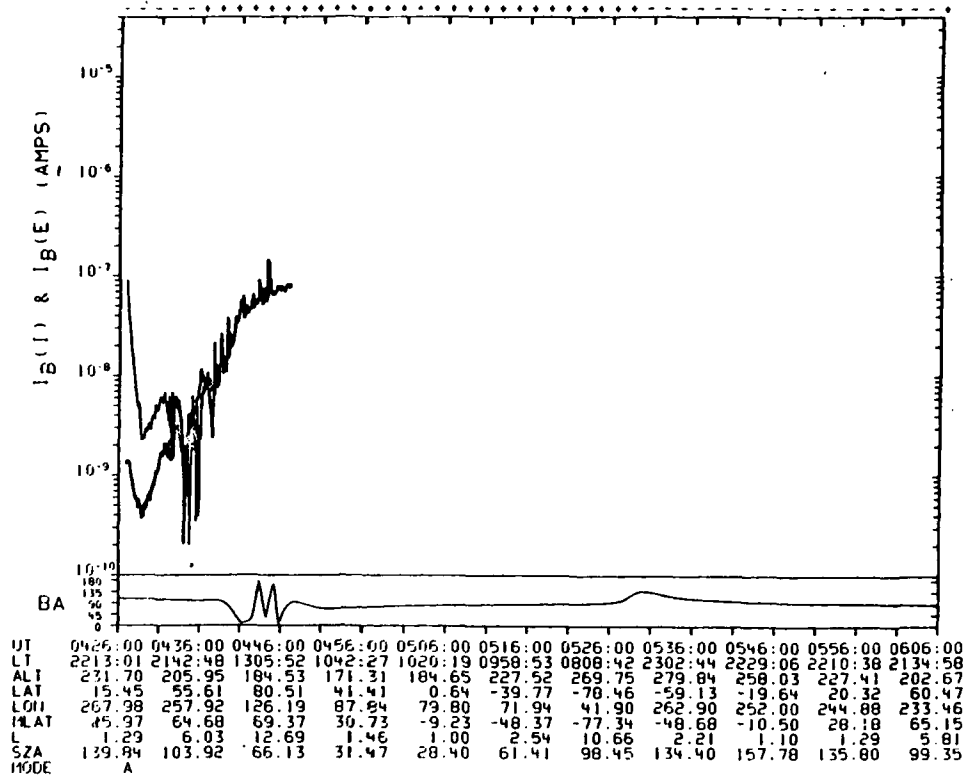


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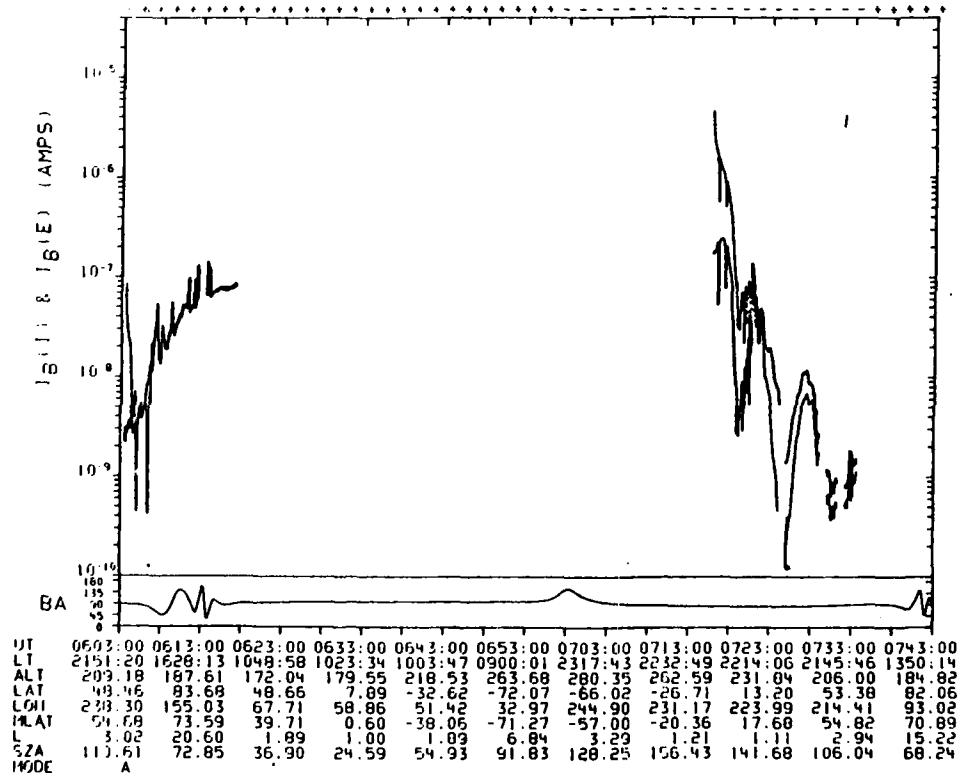


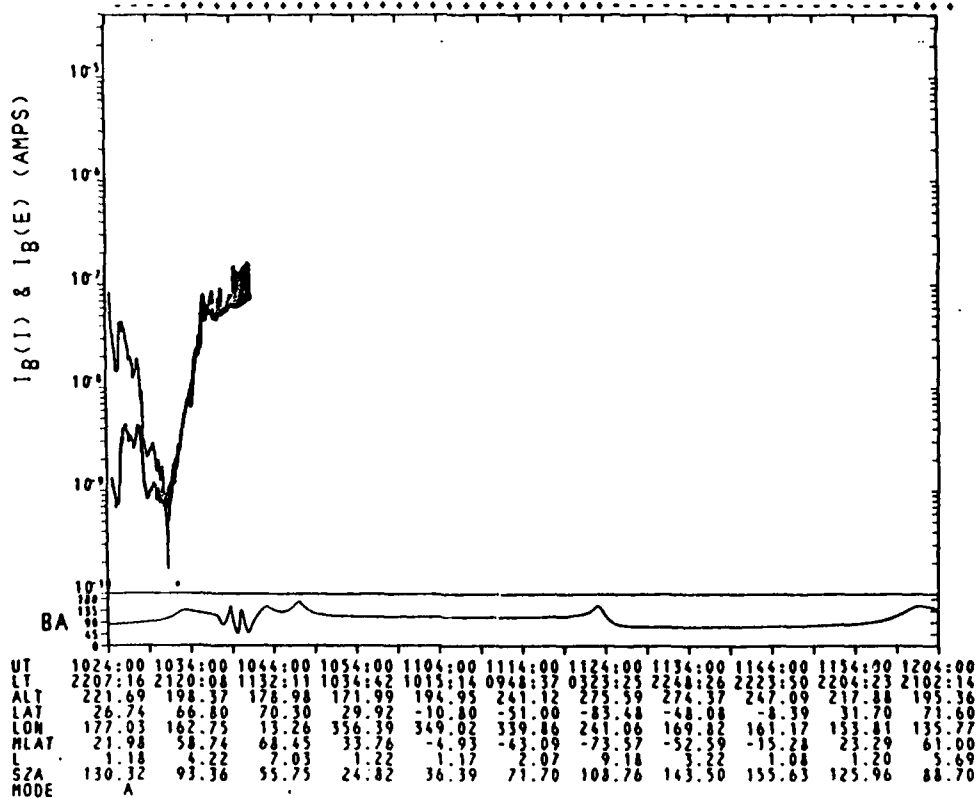
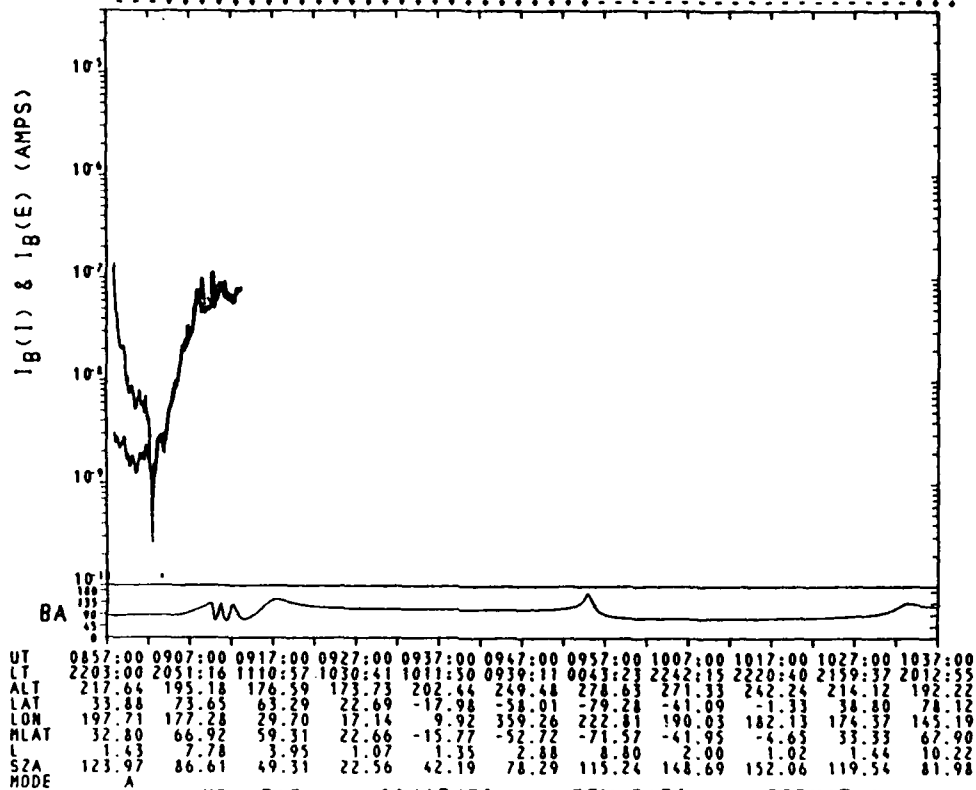
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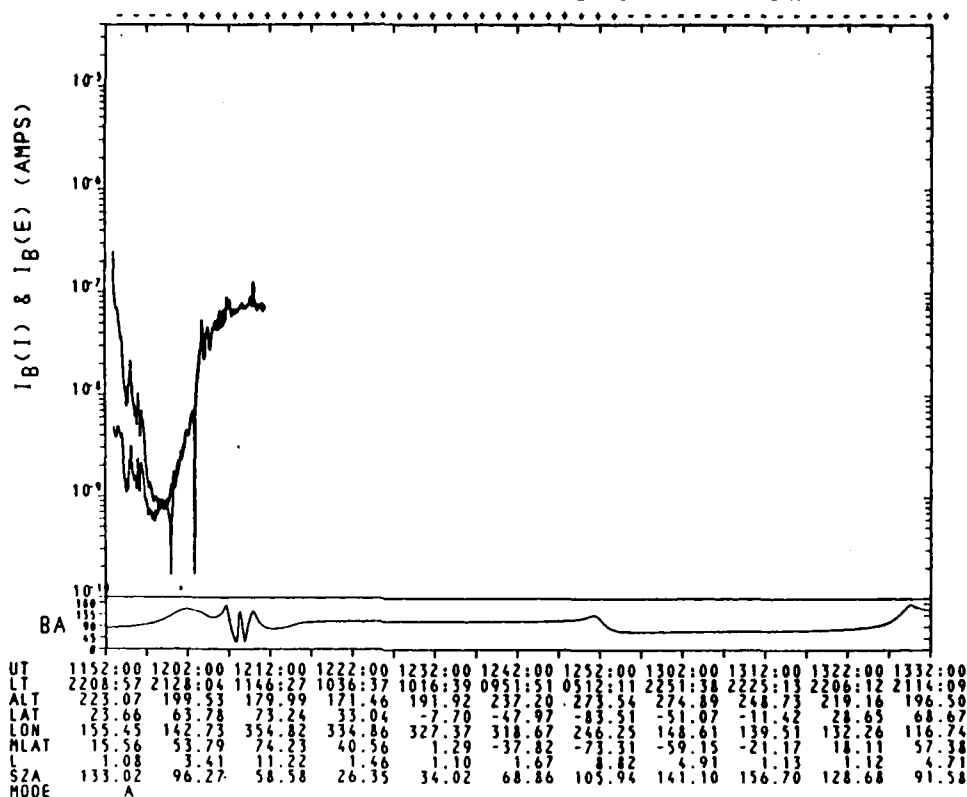


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08/13/78

REV 2432

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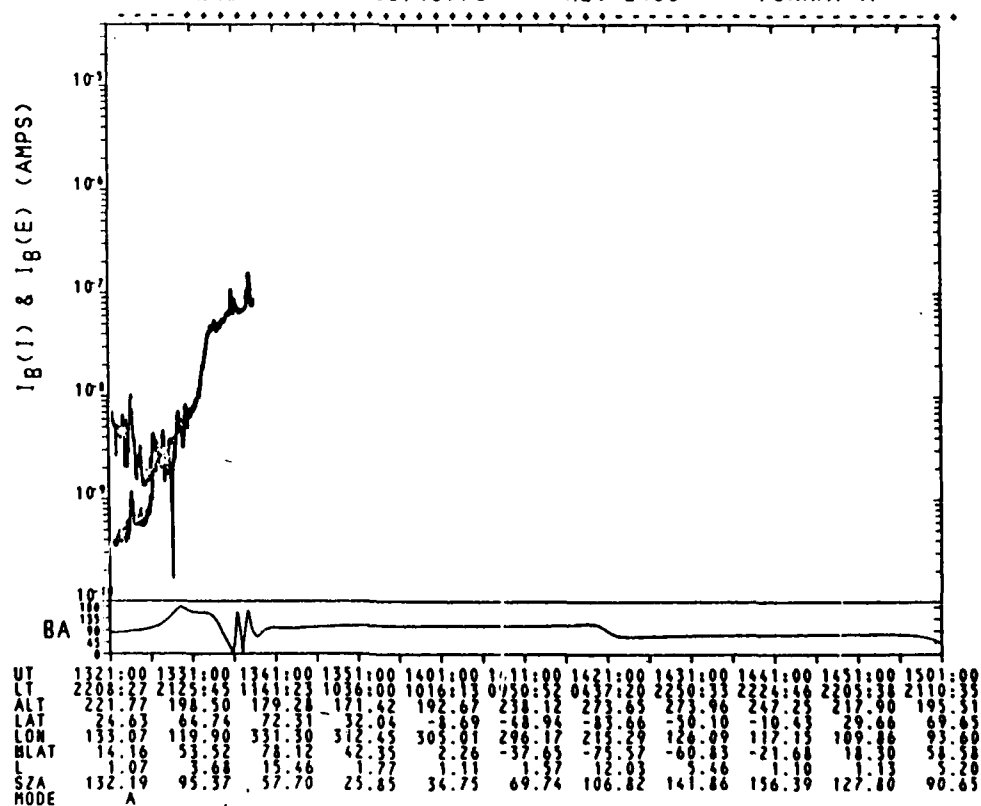


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08/13/78

REV 2433

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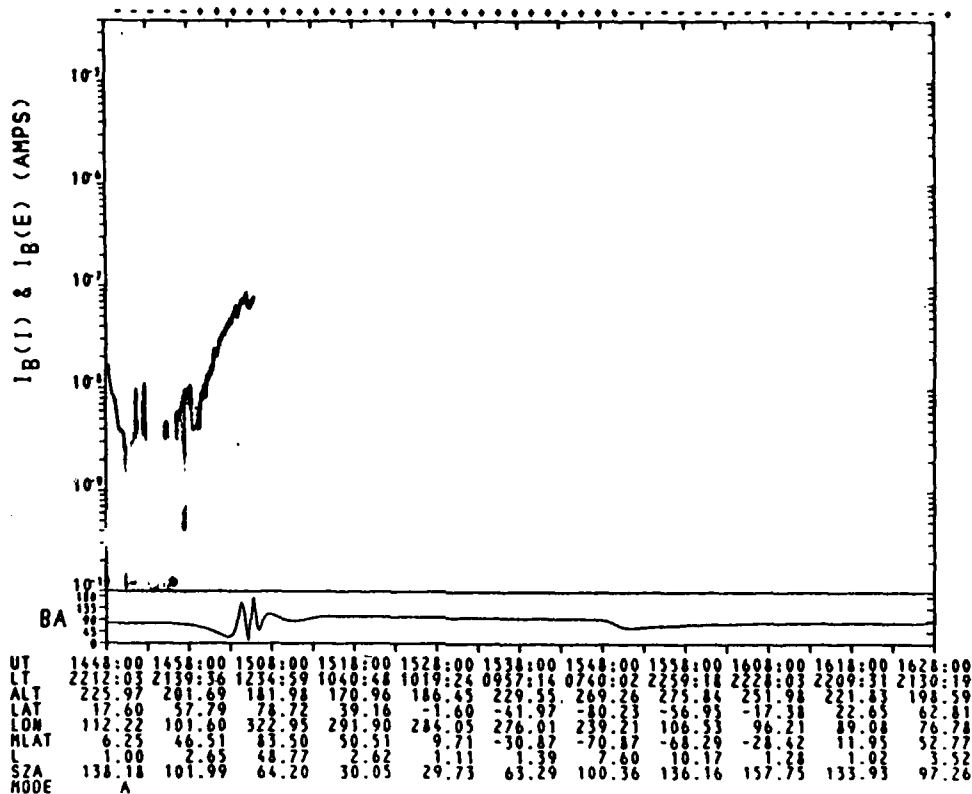


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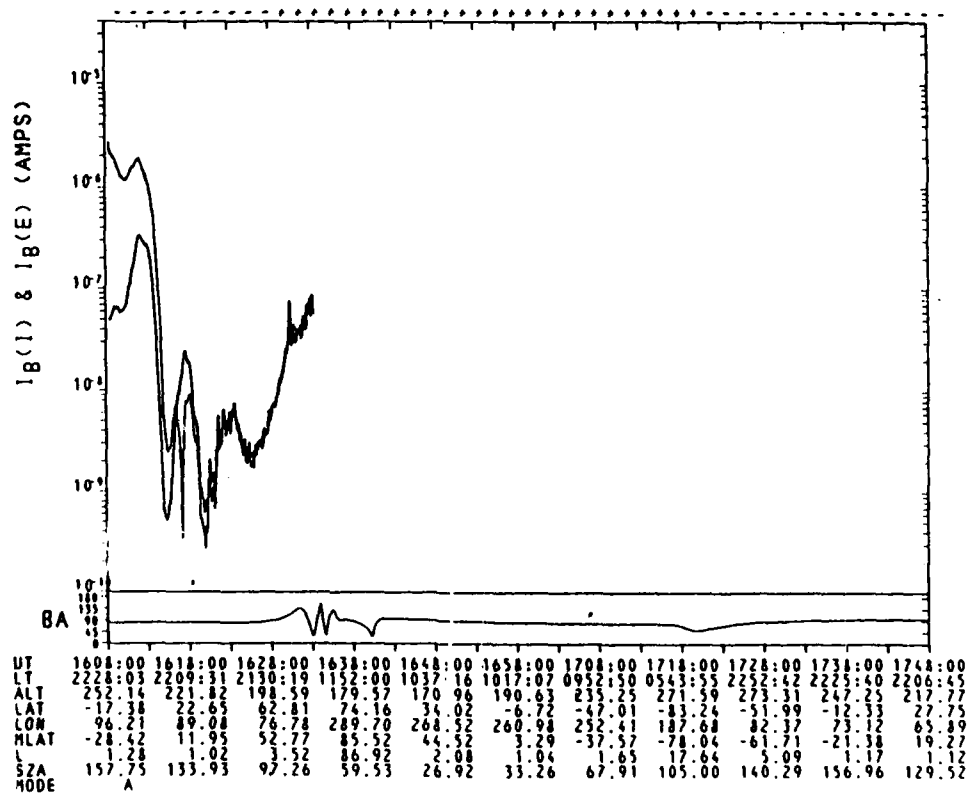


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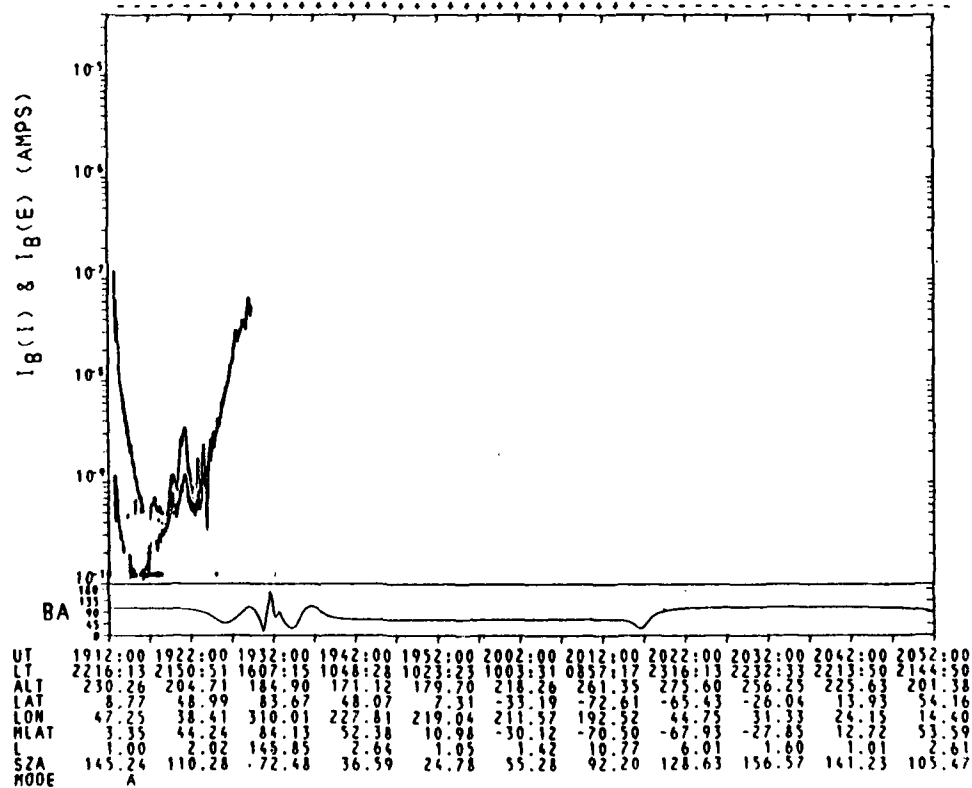
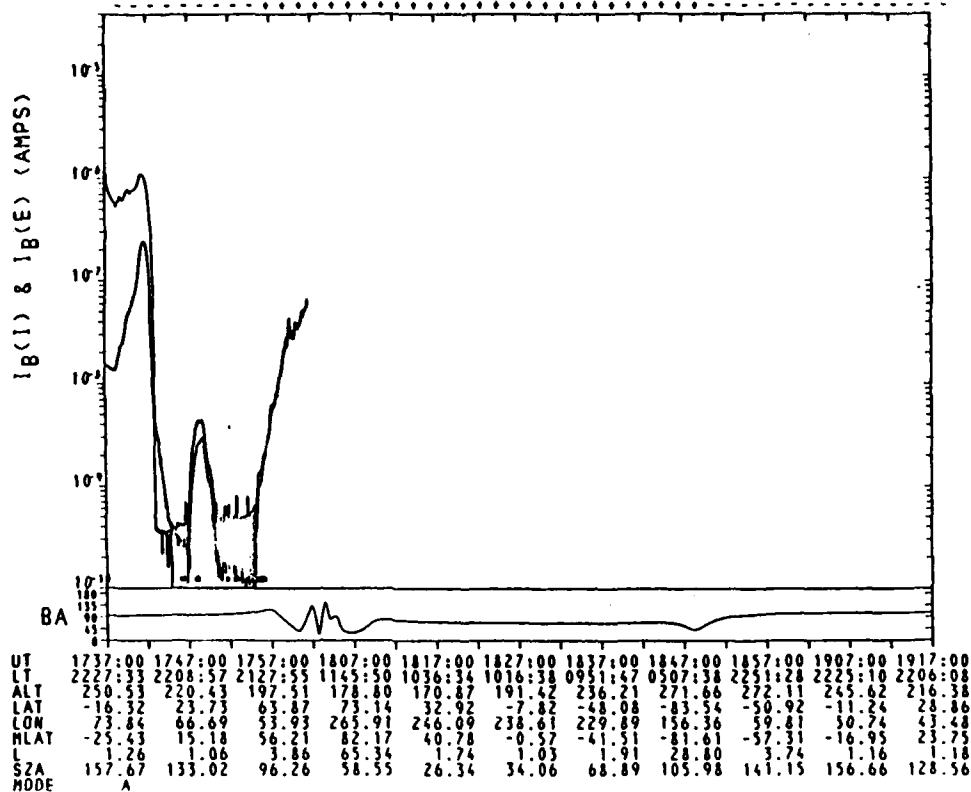
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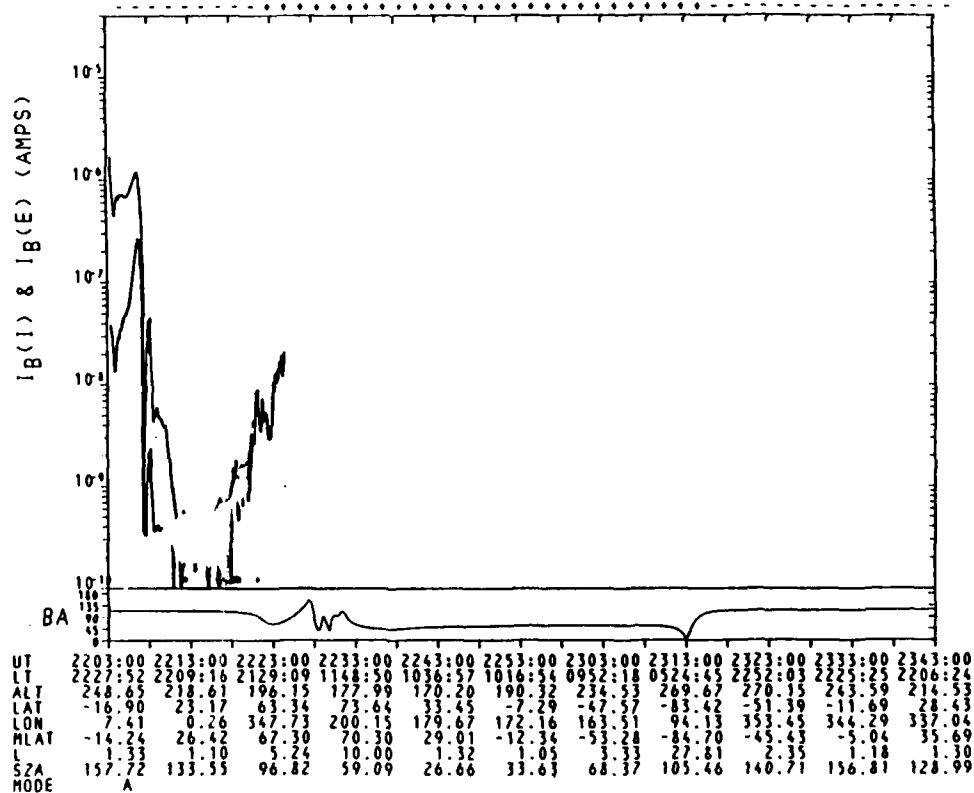
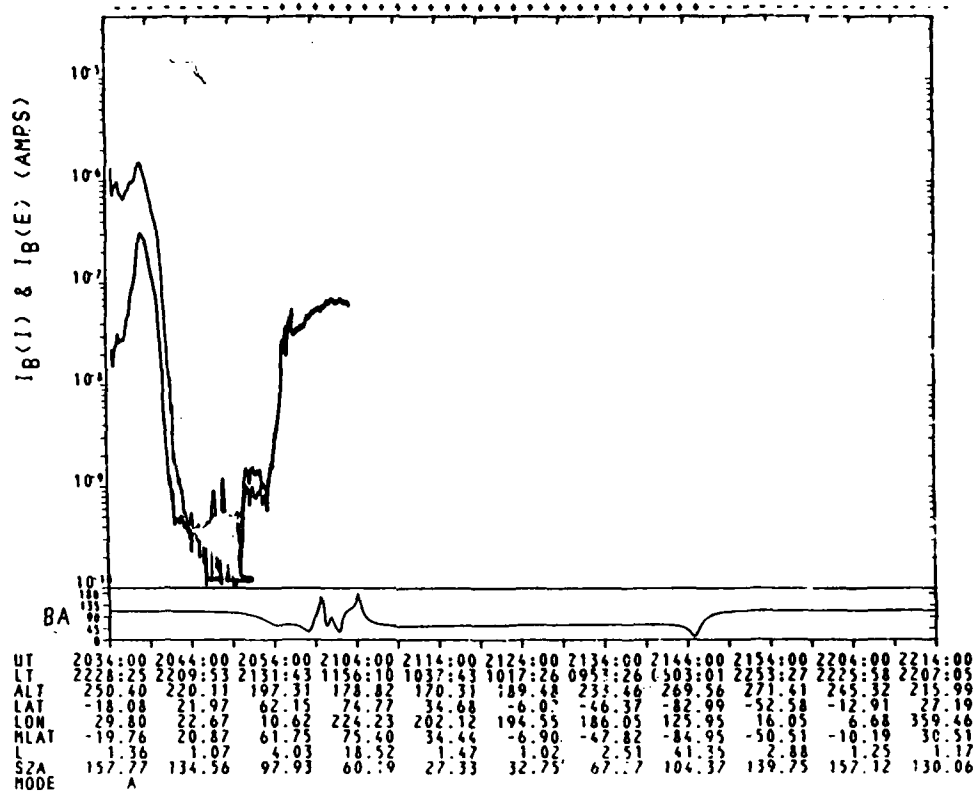
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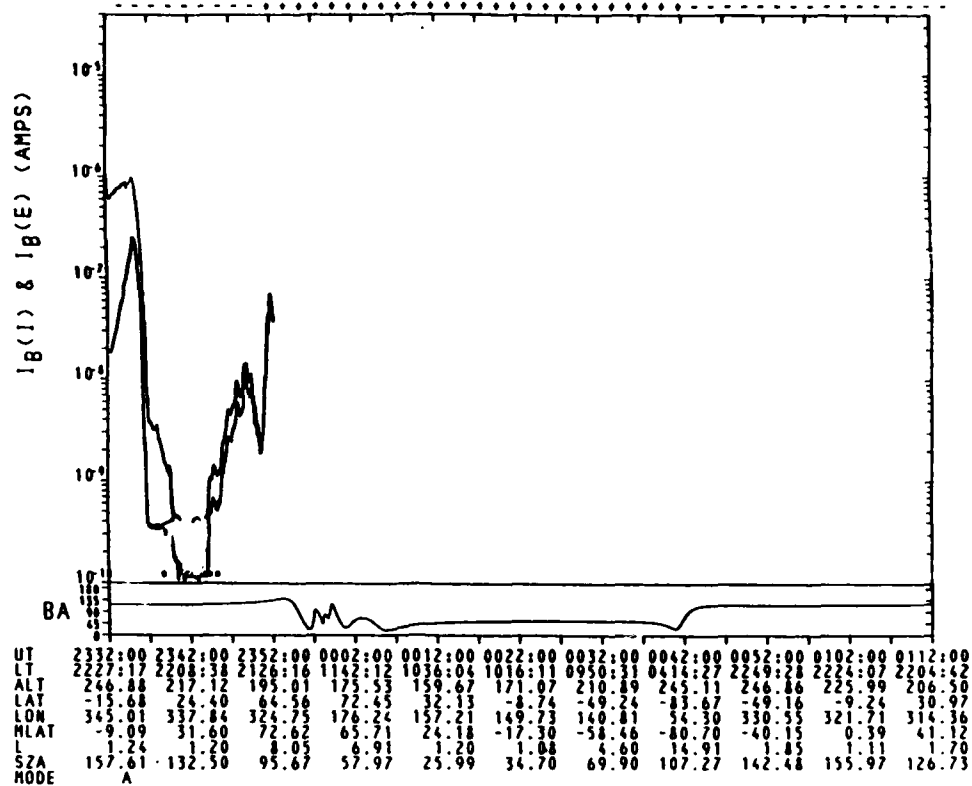


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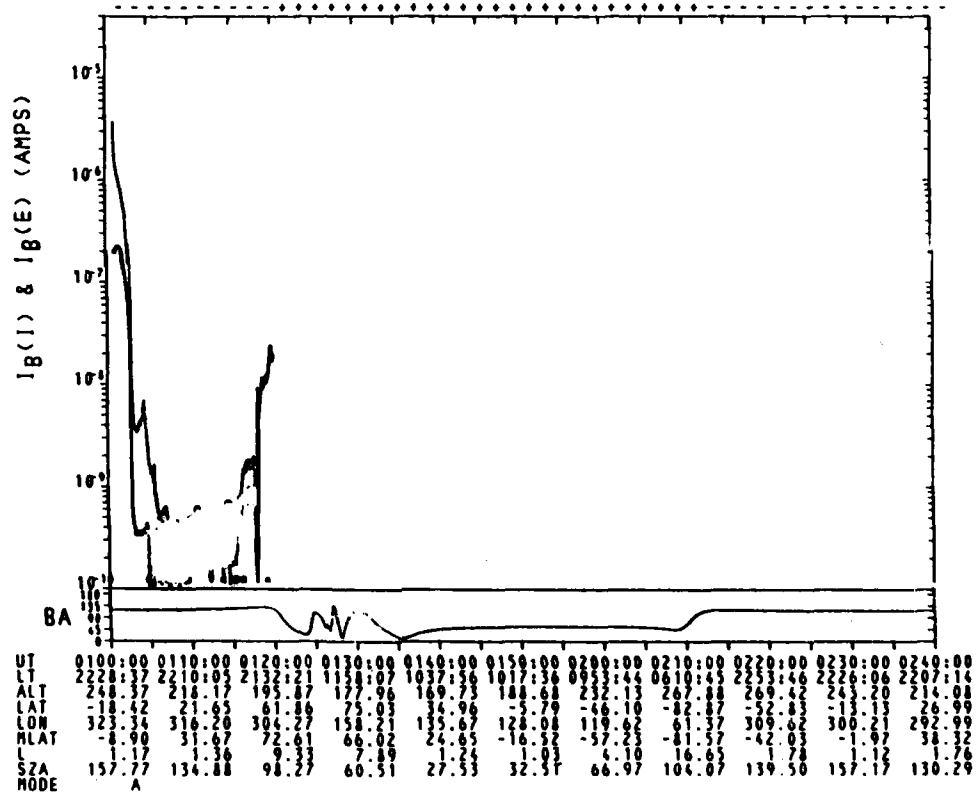


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08/14/78

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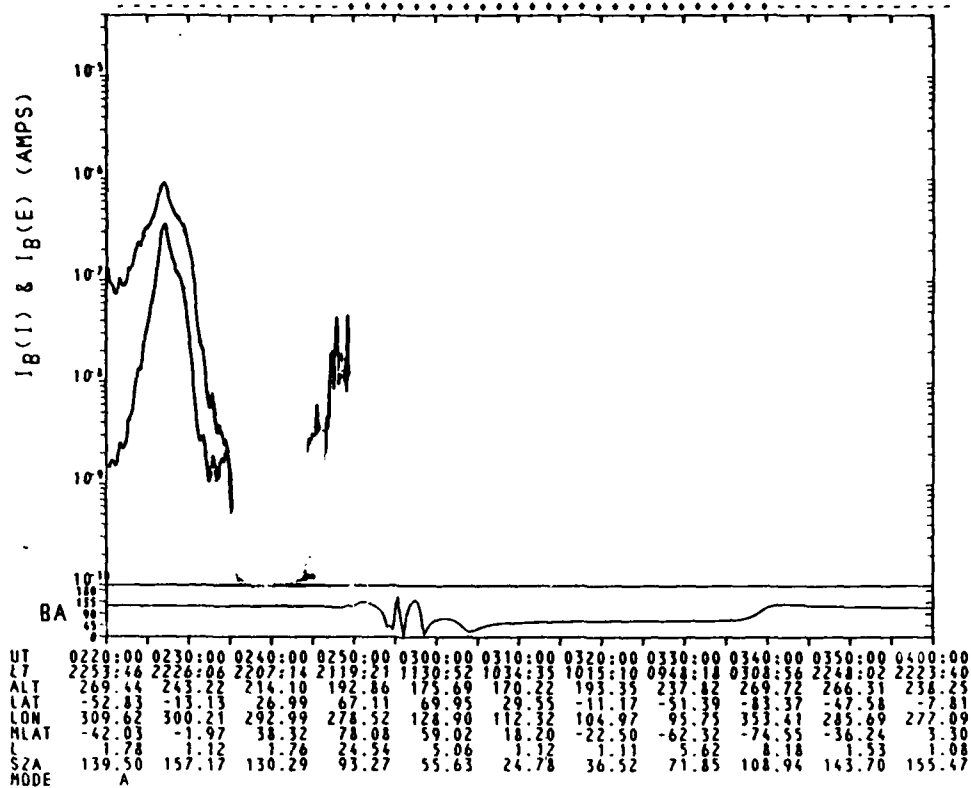


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08/14/78

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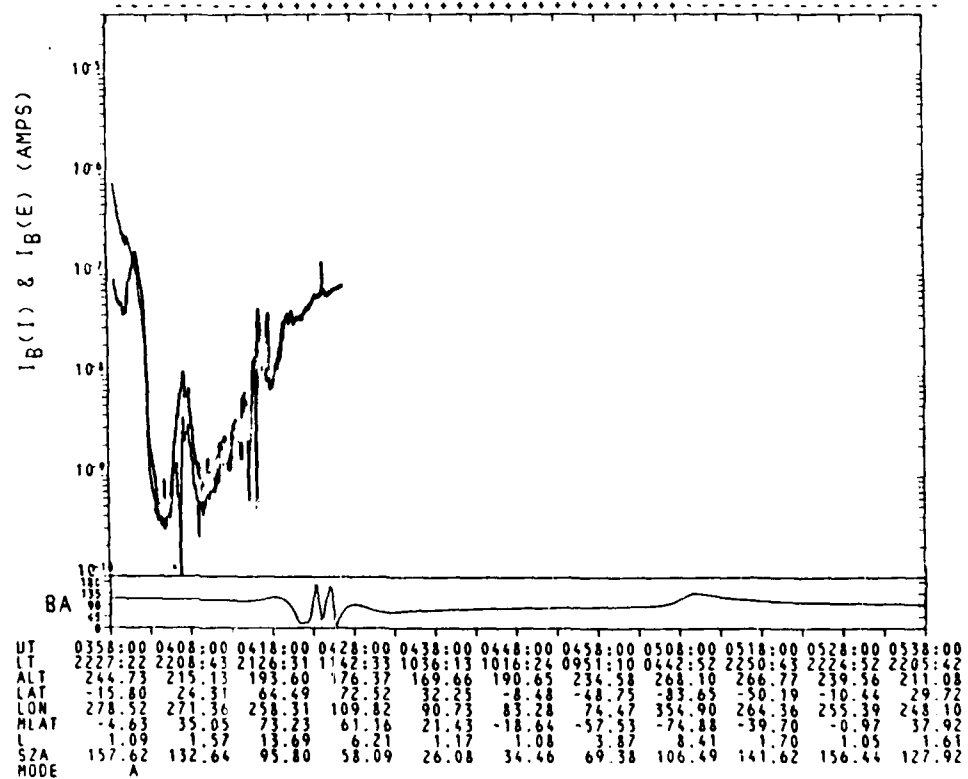


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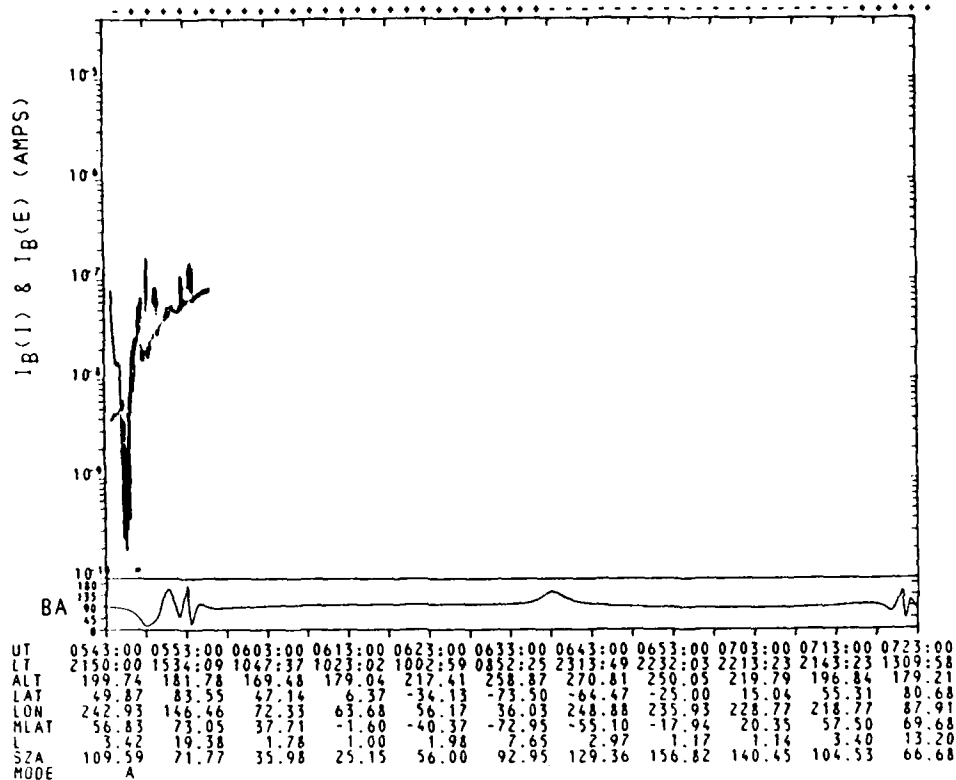


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08/14/78

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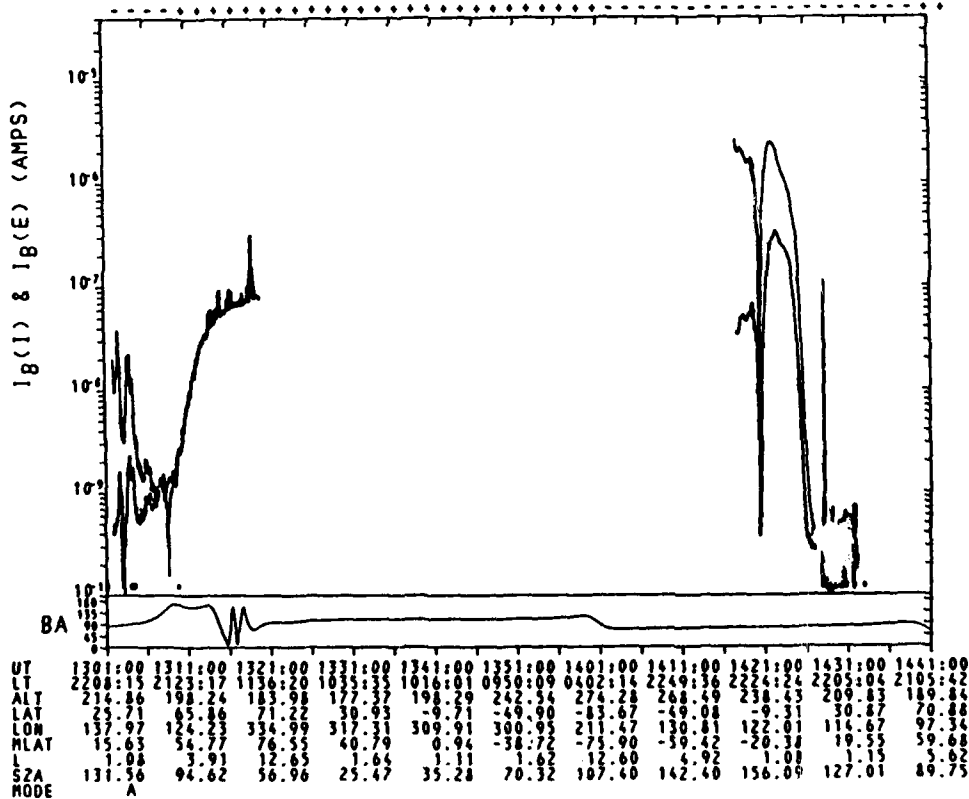


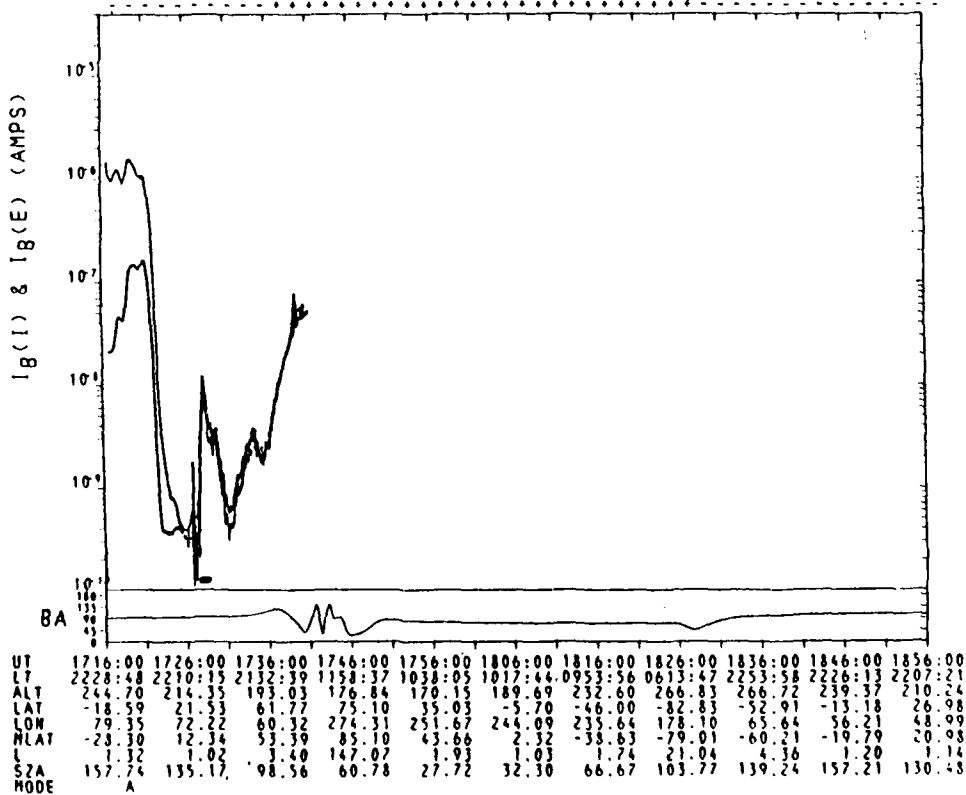
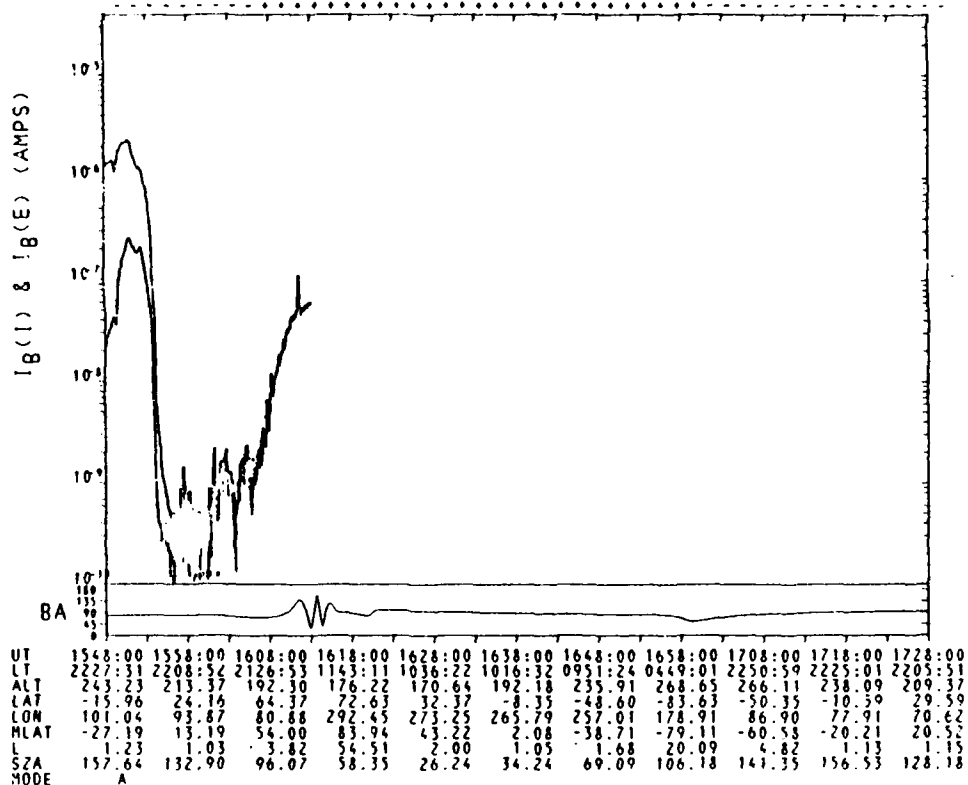
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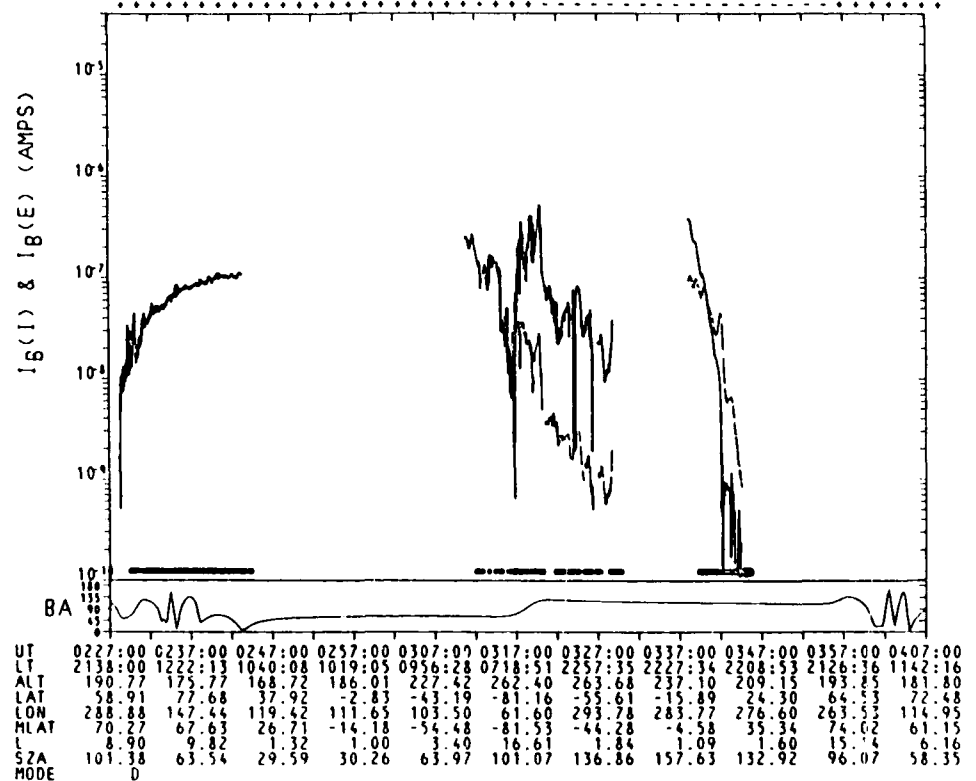
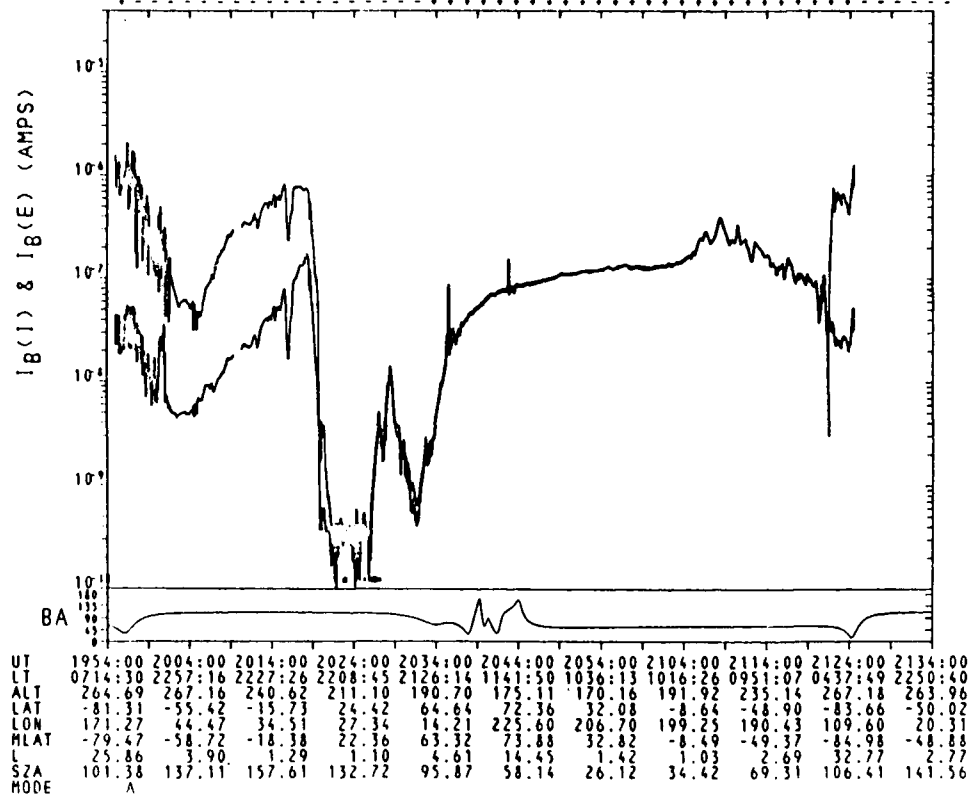
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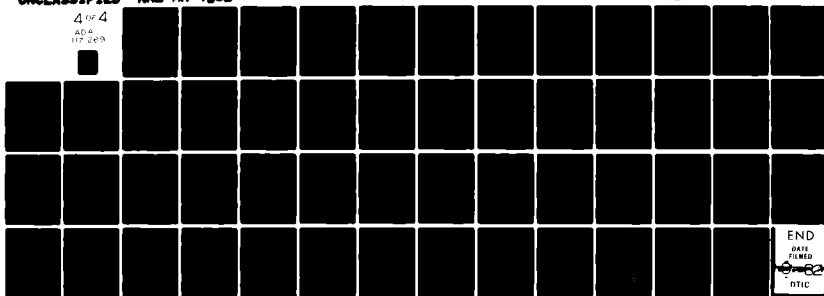
NAVAL RESEARCH LAB WASHINGTON DC  
AN ATLAS OF IONOSPHERIC F-REGION STRUCTURES AS DETERMINED BY TH-ETC(U)  
JUL 88 E P SZUECZEWICZ, J C HOLMES  
NRL-NR-4842

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117 269



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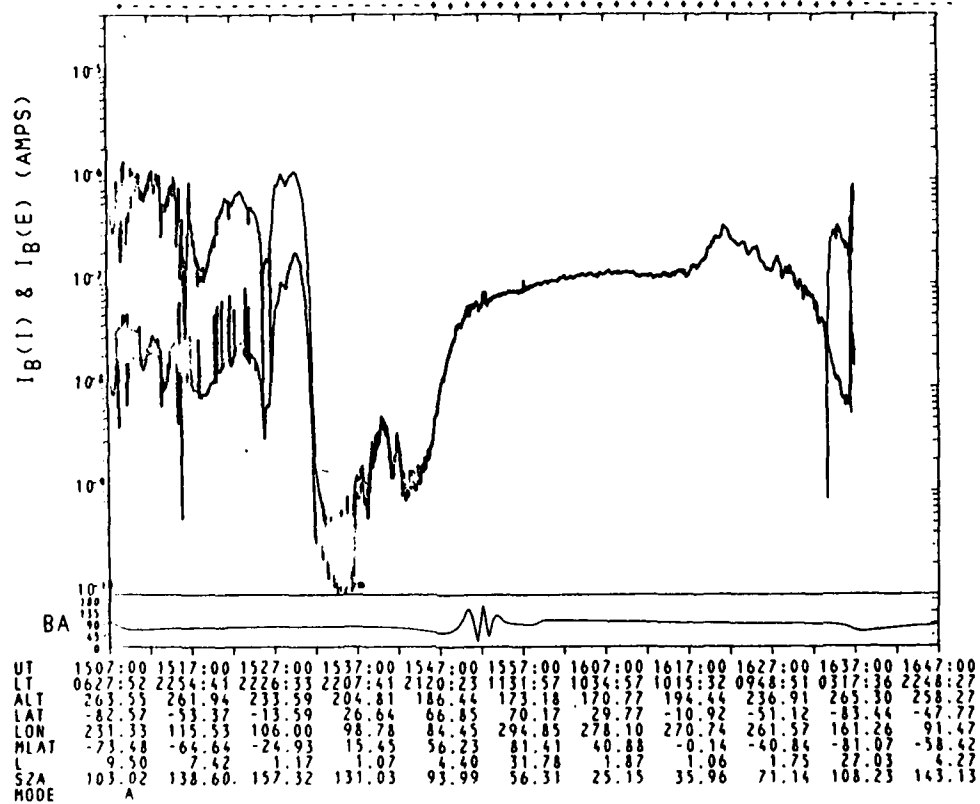
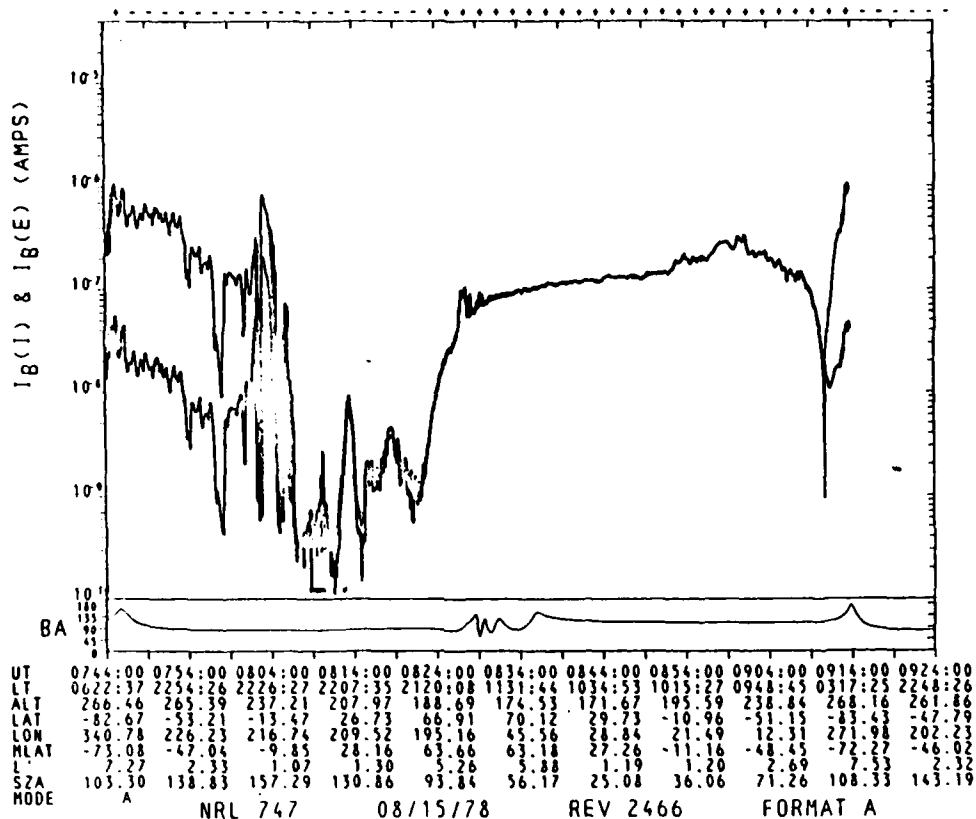


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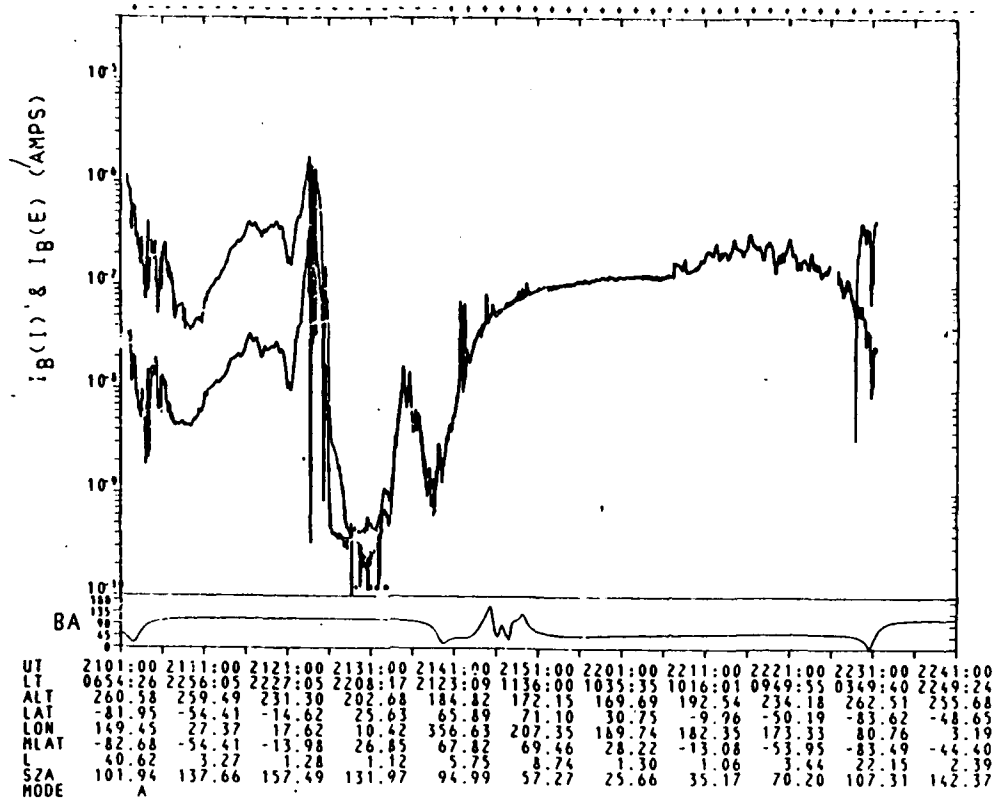


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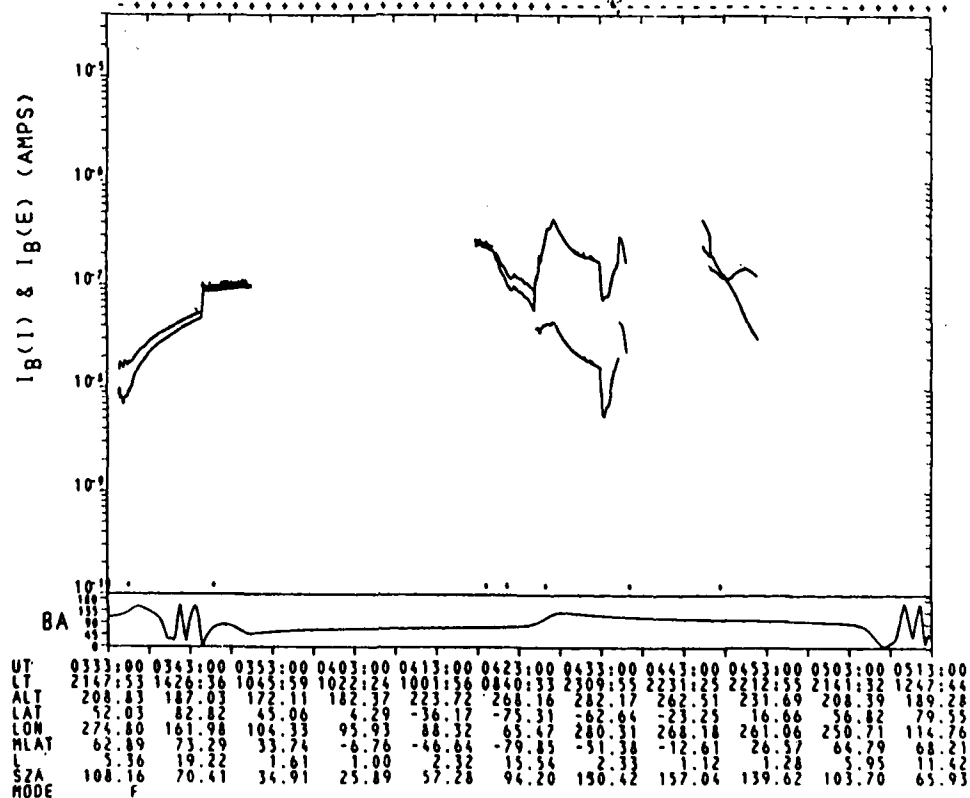


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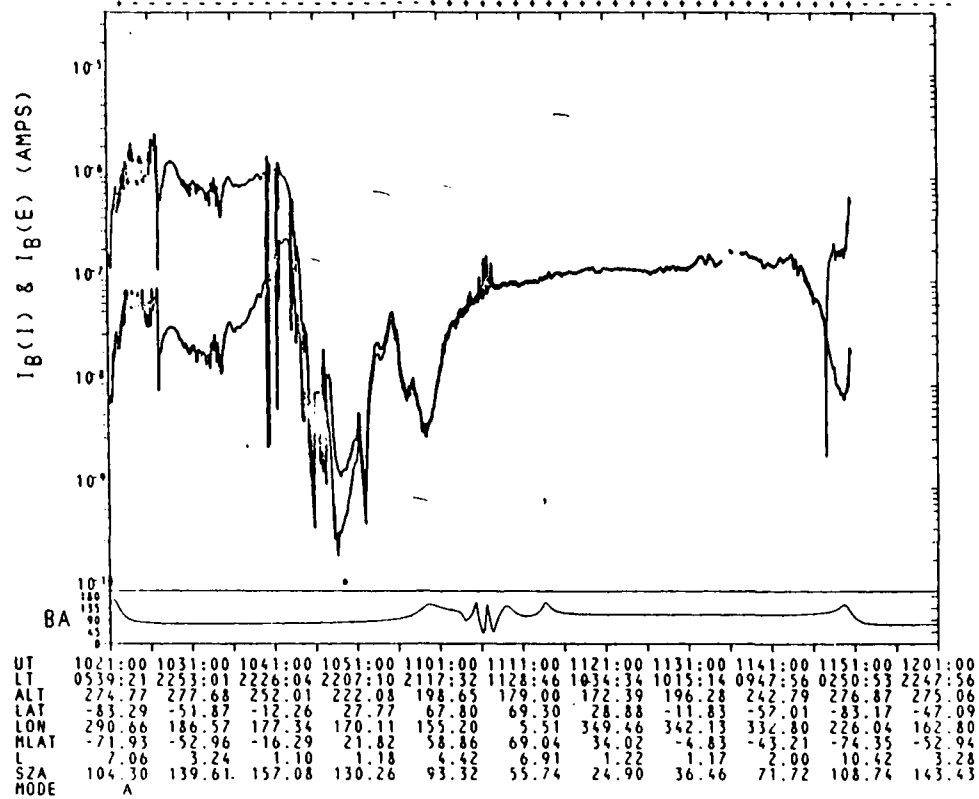


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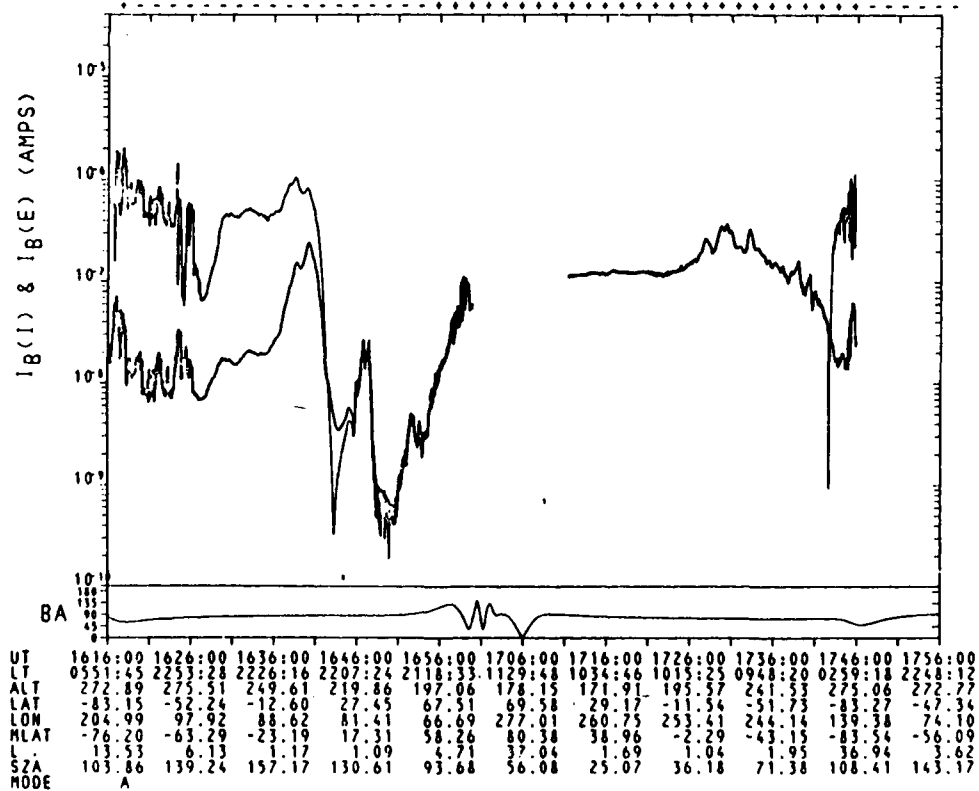


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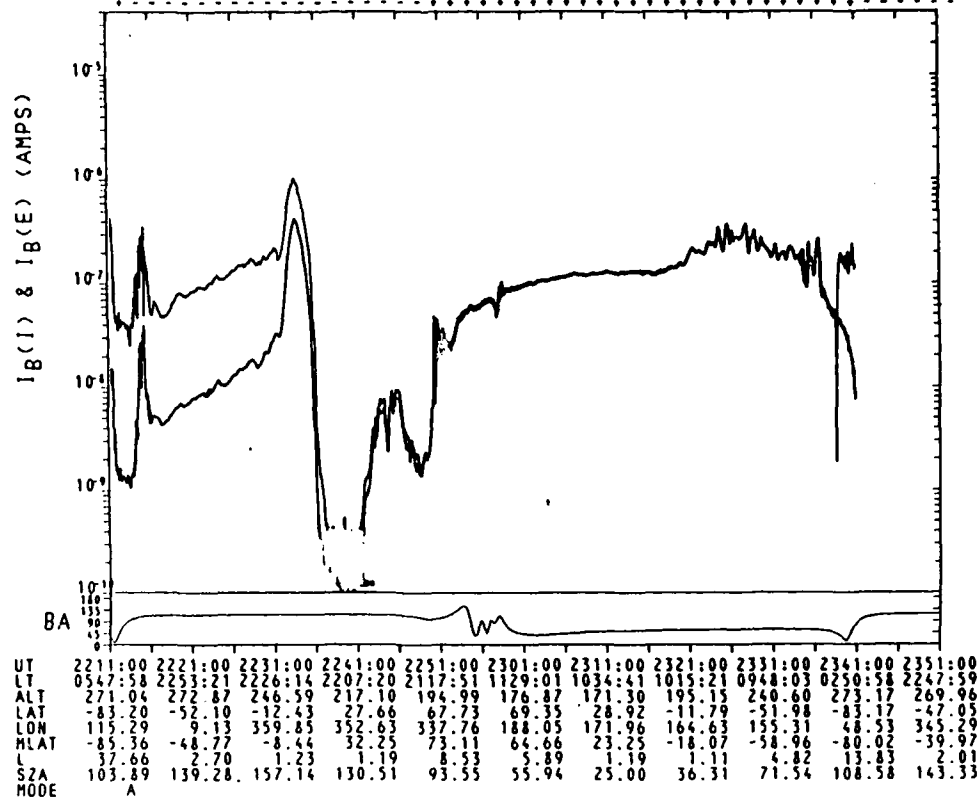


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08/16/78

REV 2487

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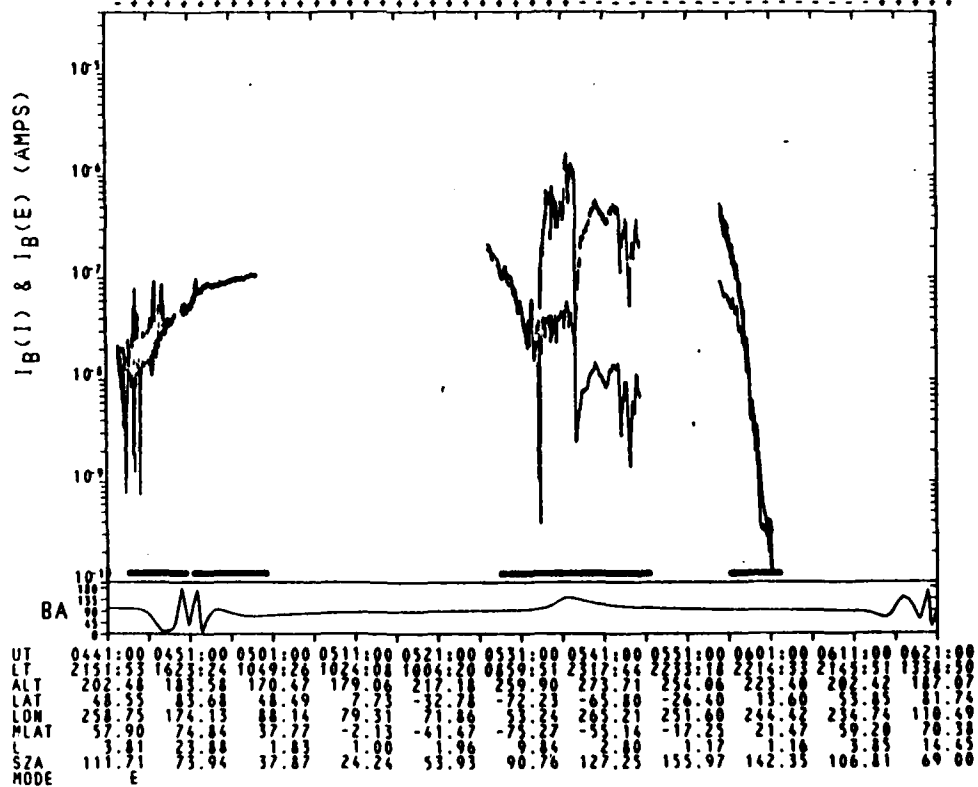


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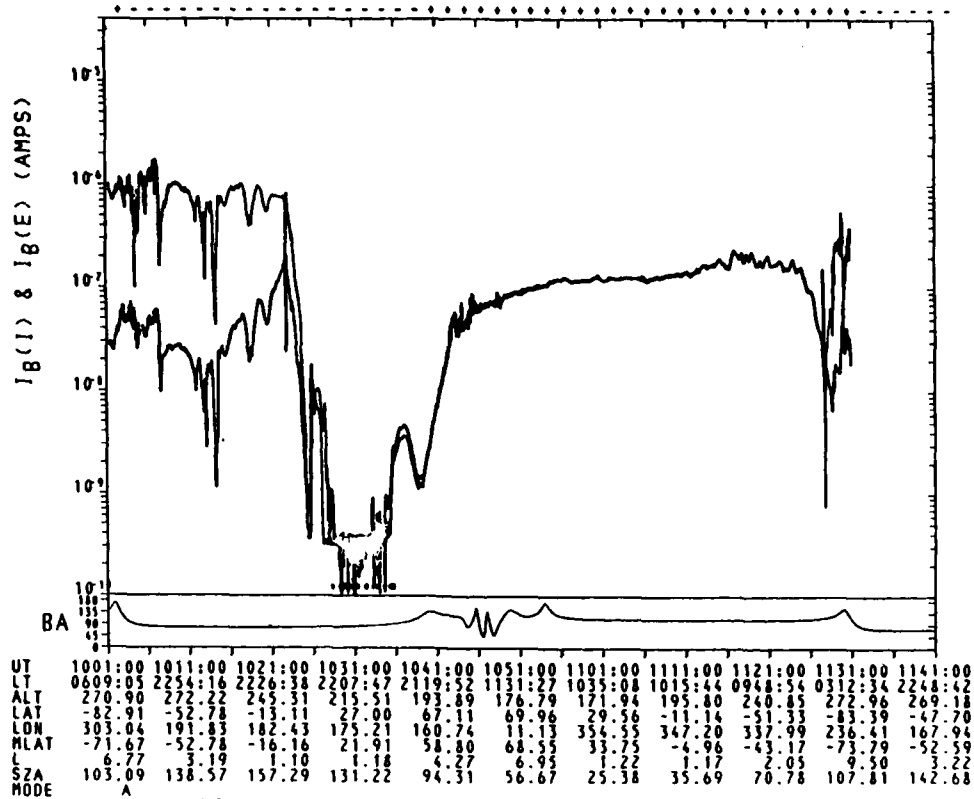


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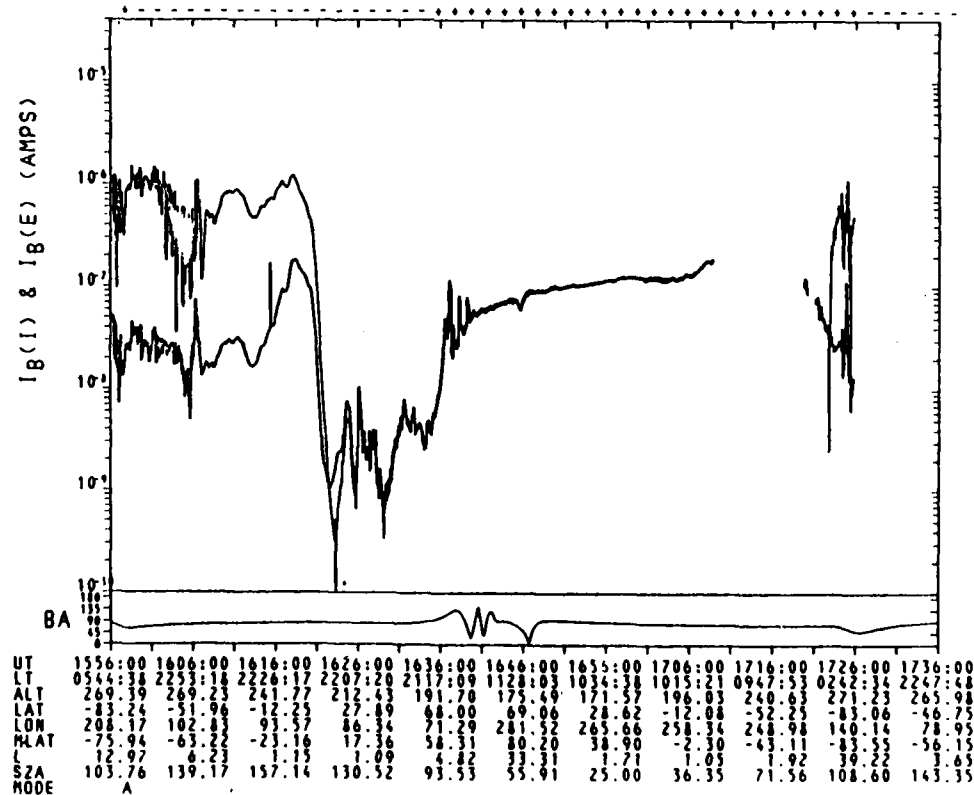


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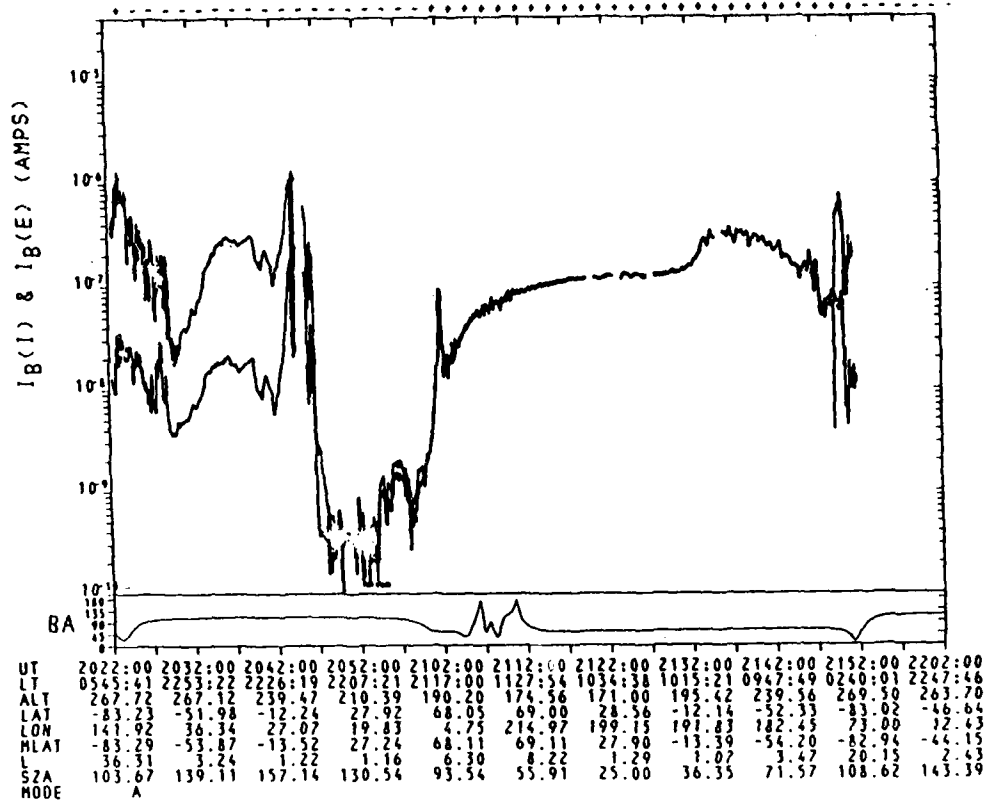


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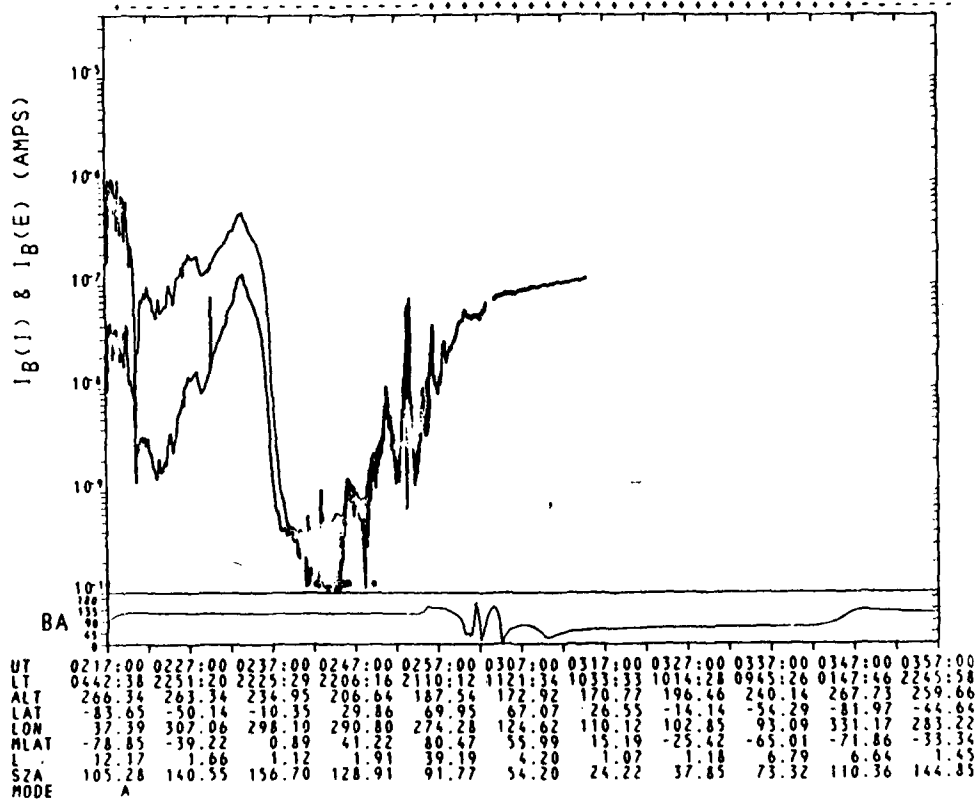


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08/18/78

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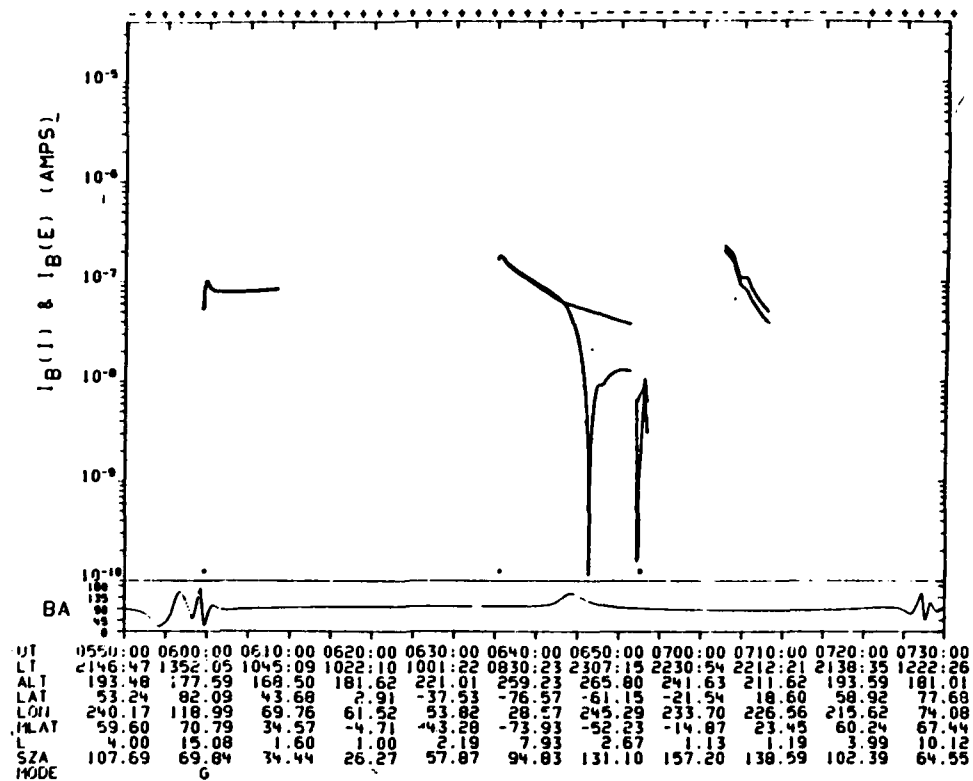


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08/18/78

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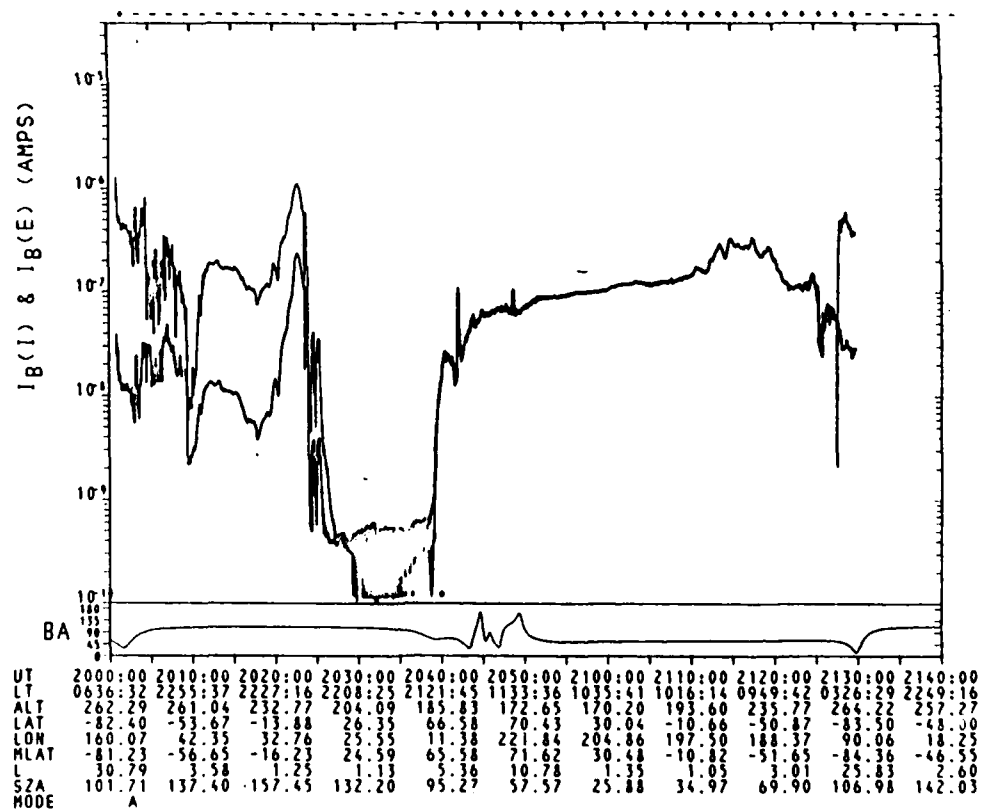


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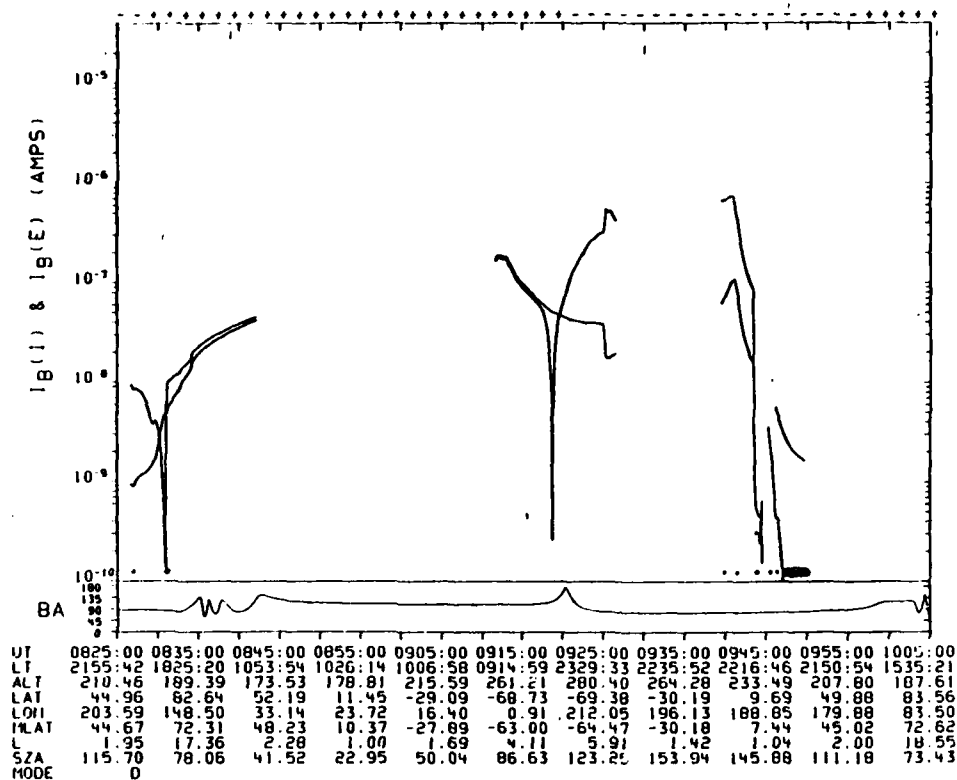


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08/19/78

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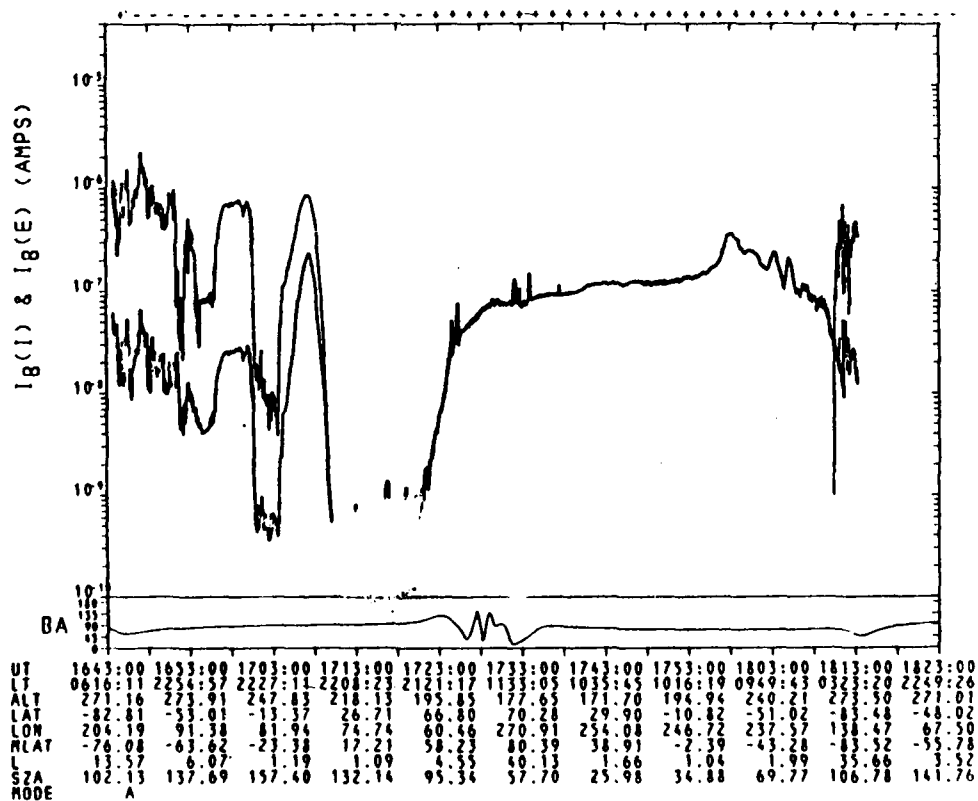


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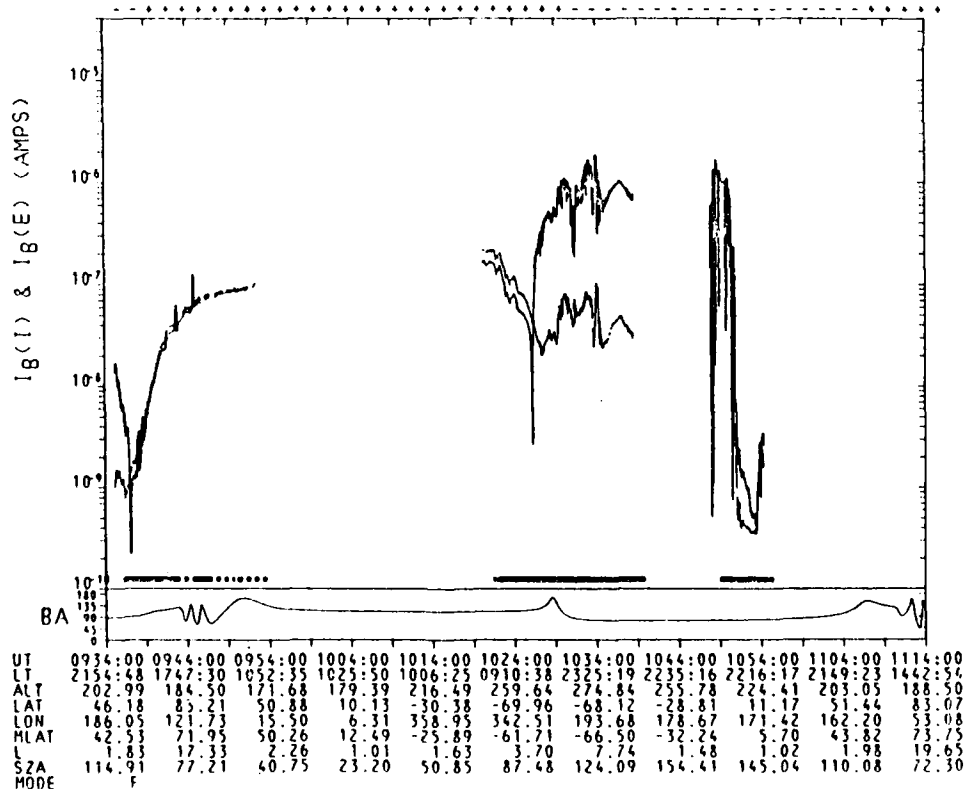
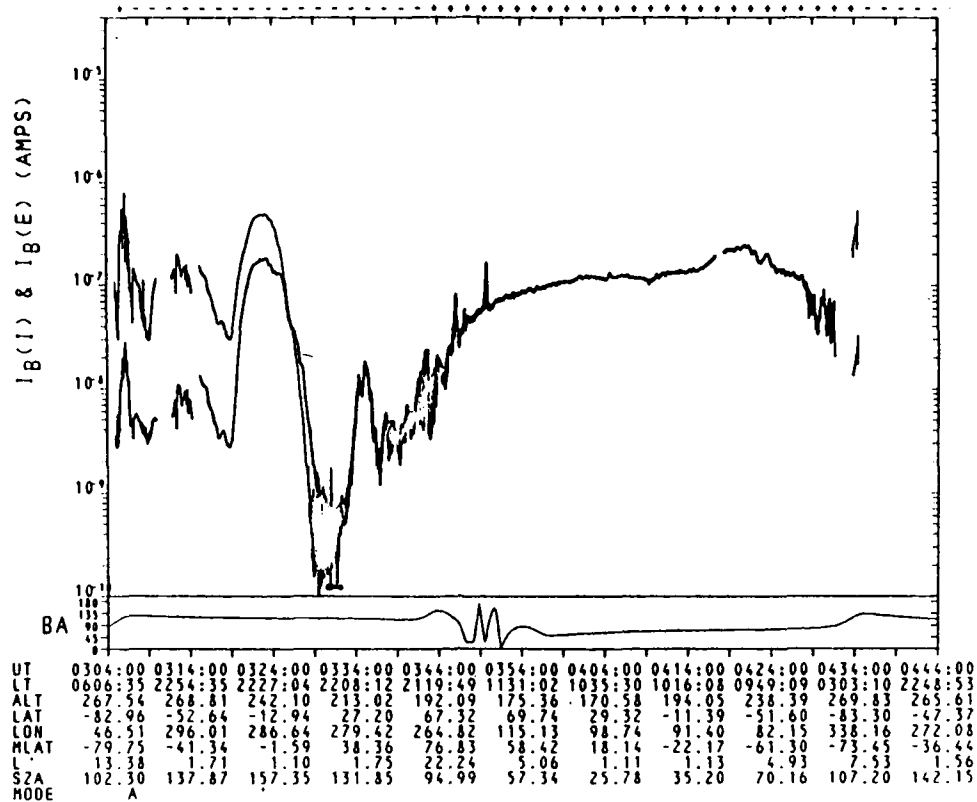
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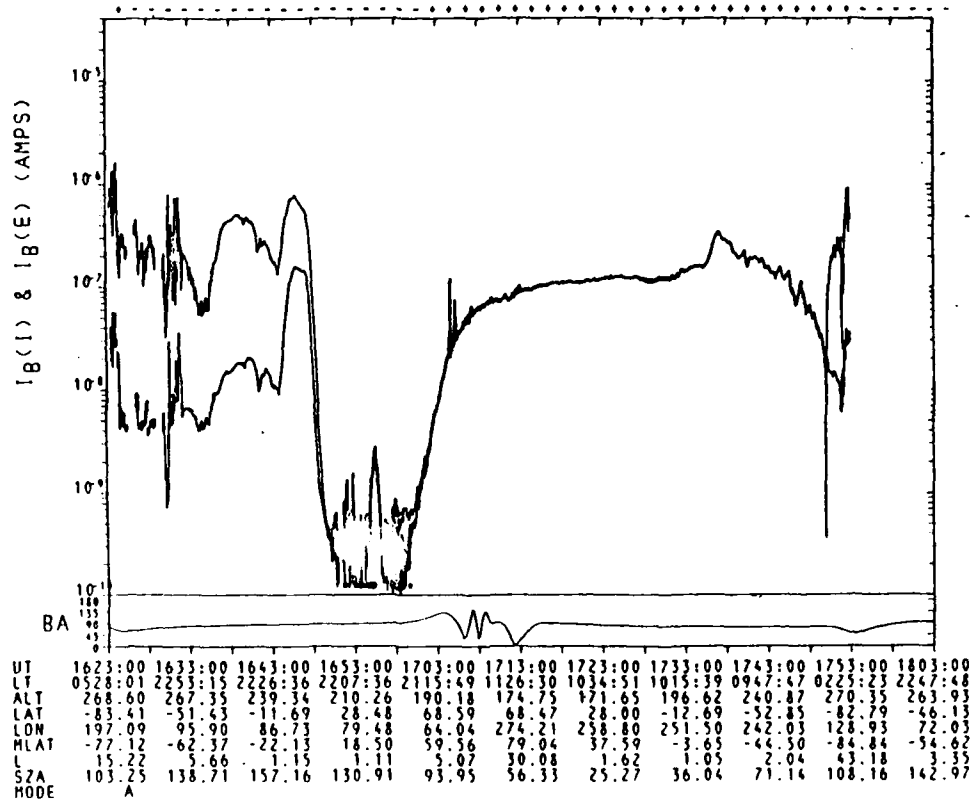


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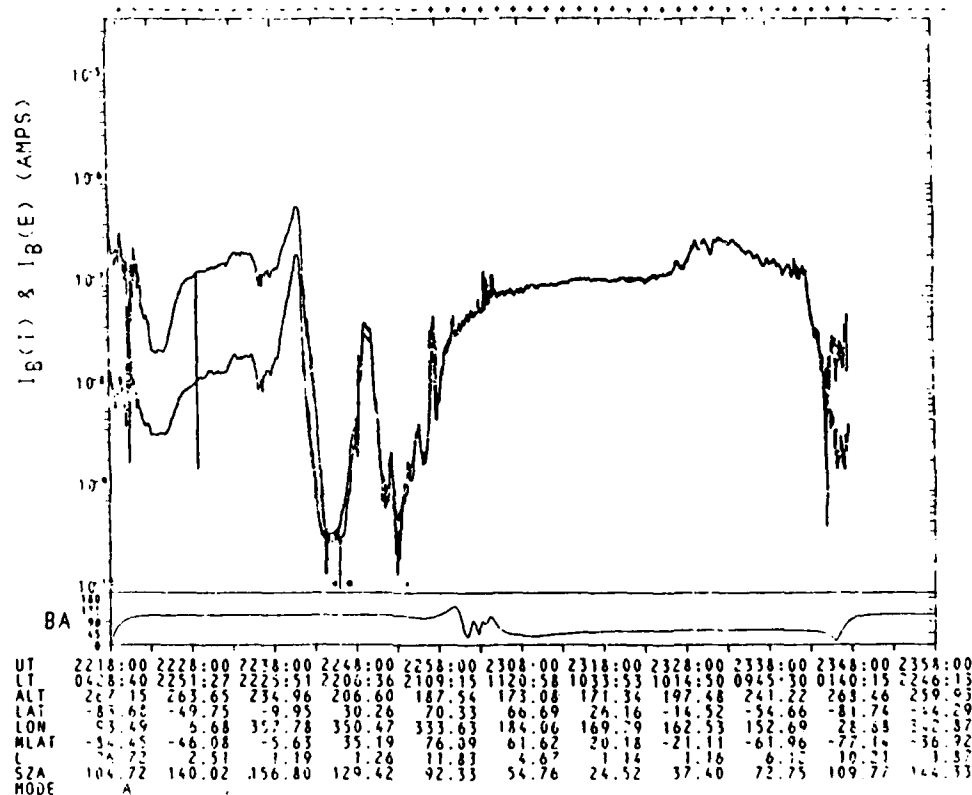


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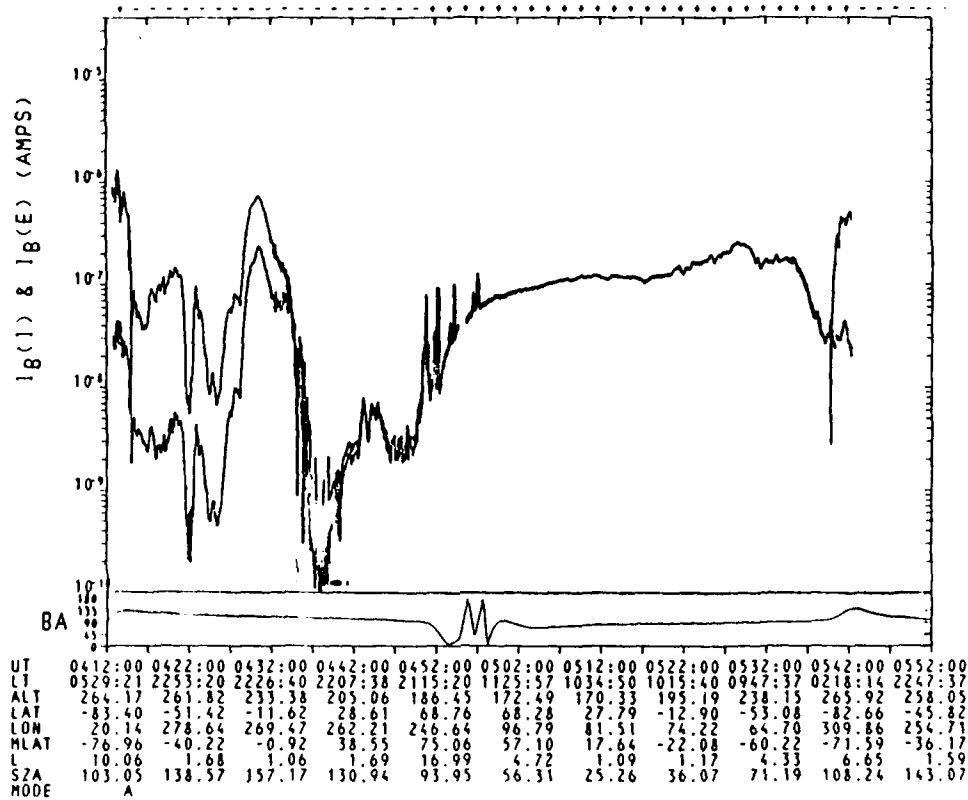


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08/21/78

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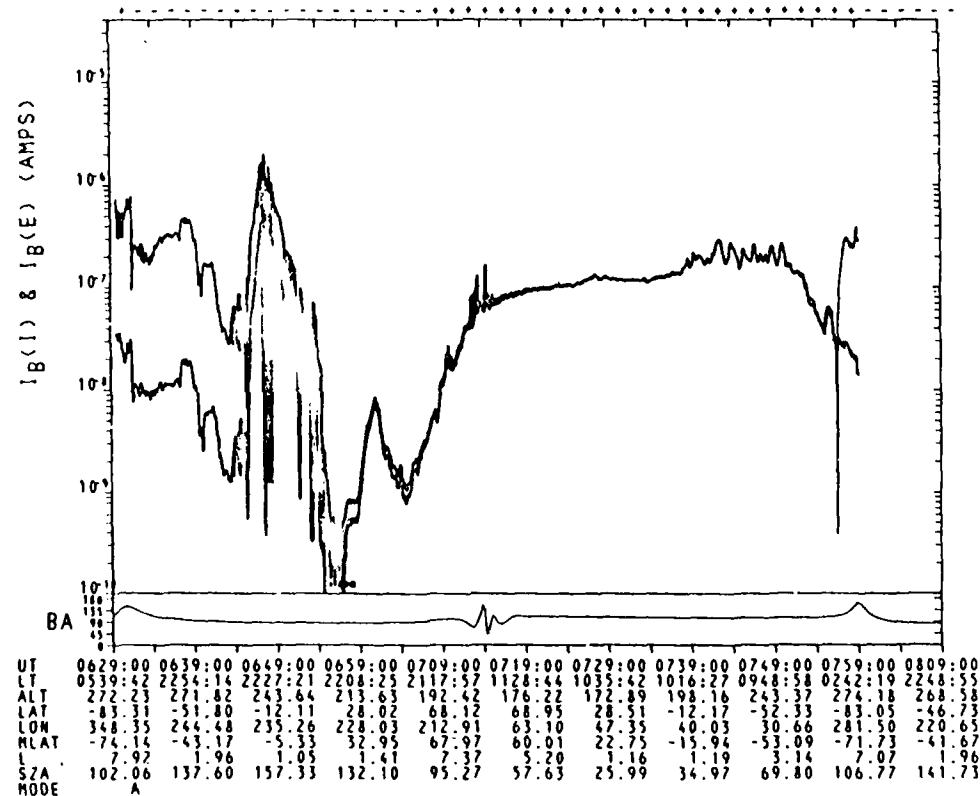


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08/23/78

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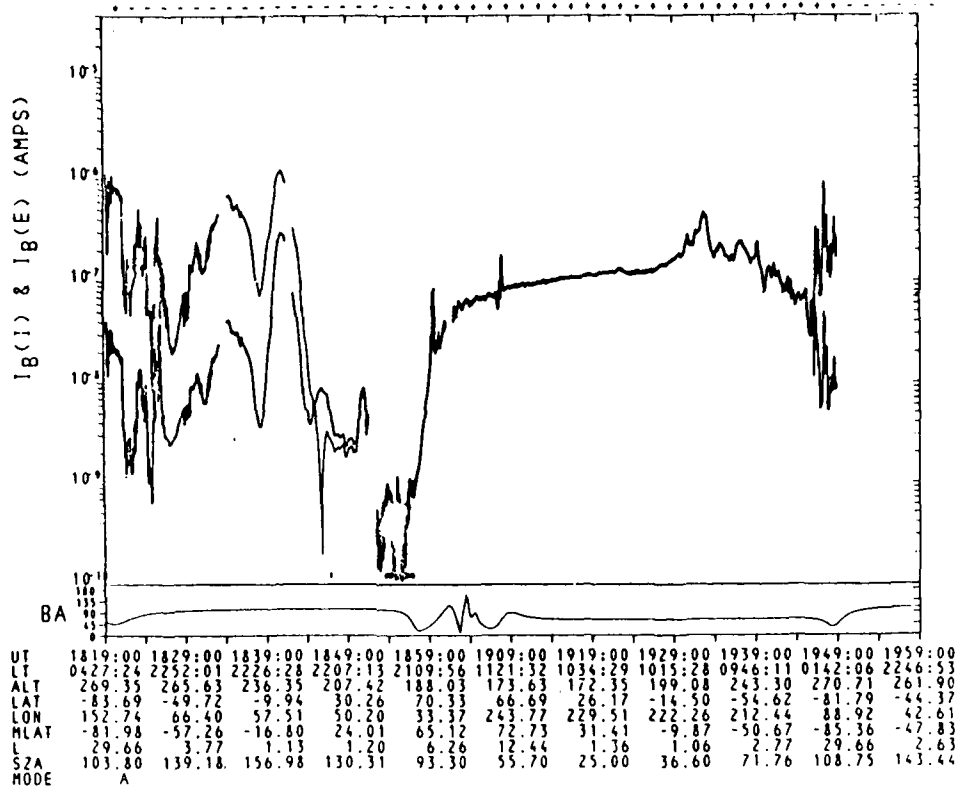


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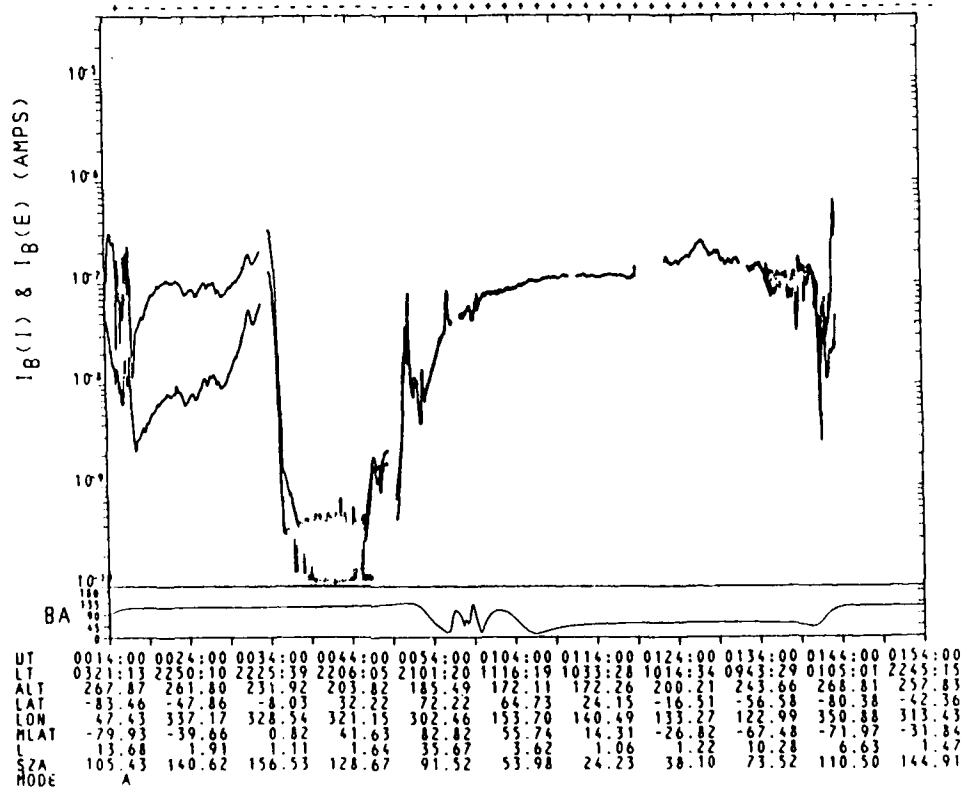


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08/24/78

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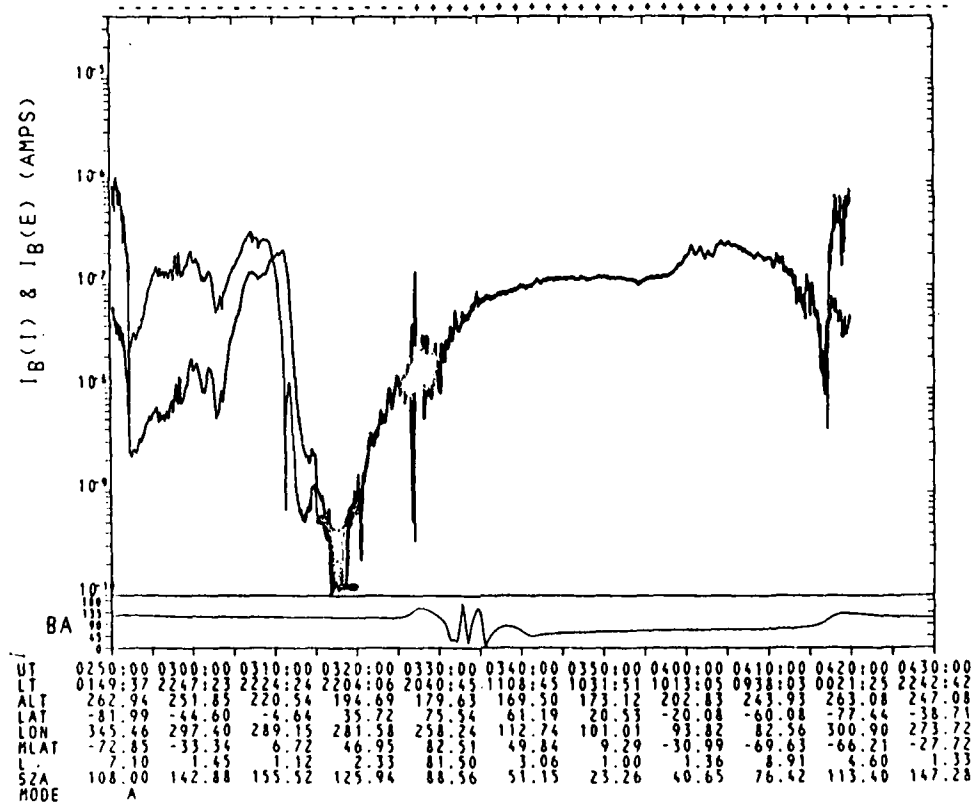
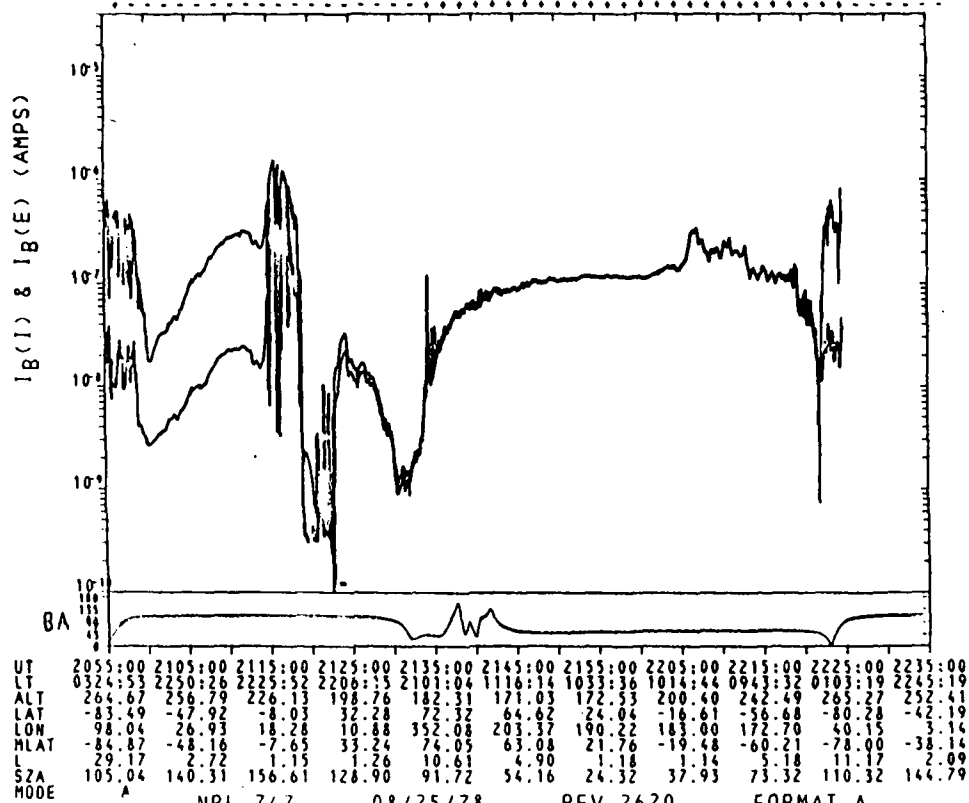


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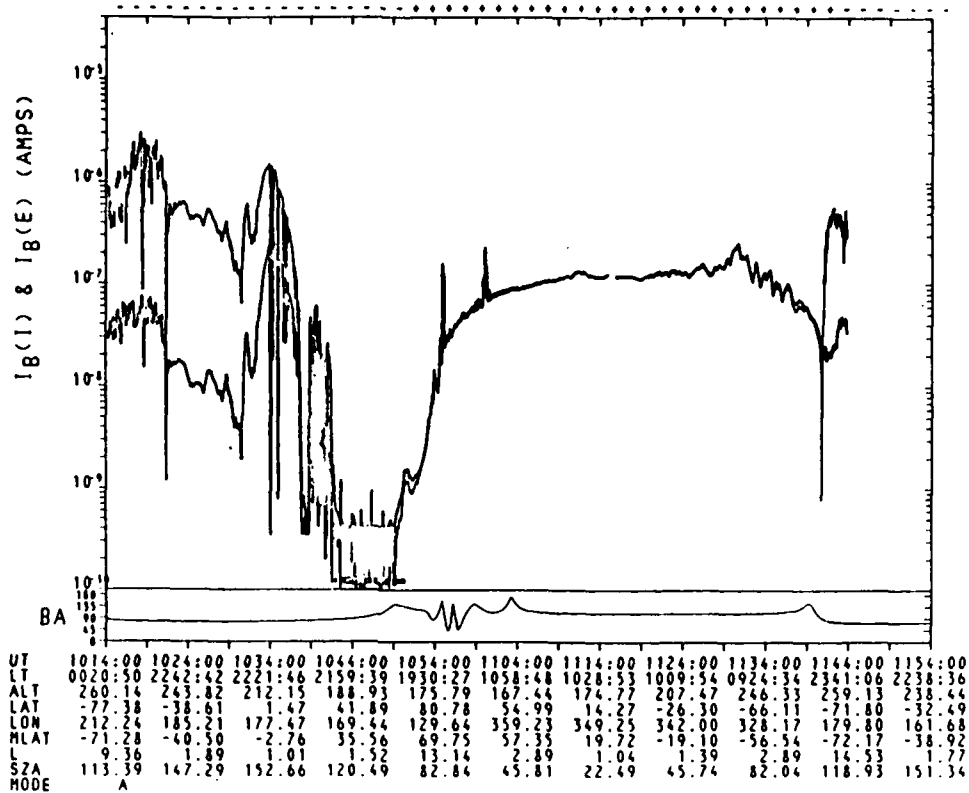


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08/25/78

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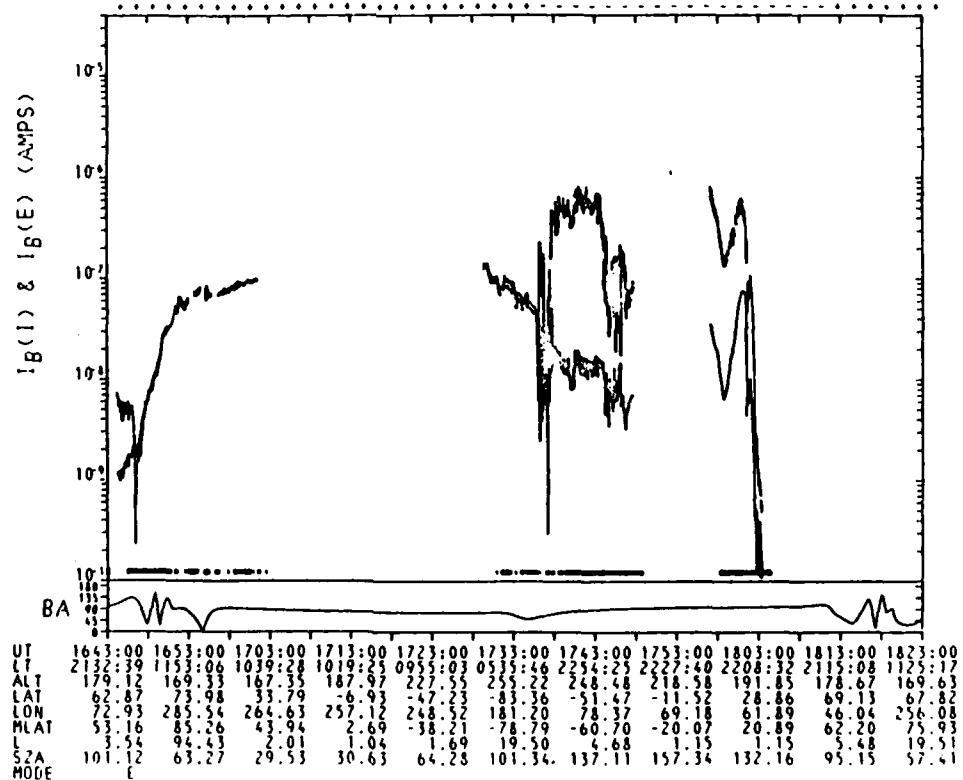


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08/25/78

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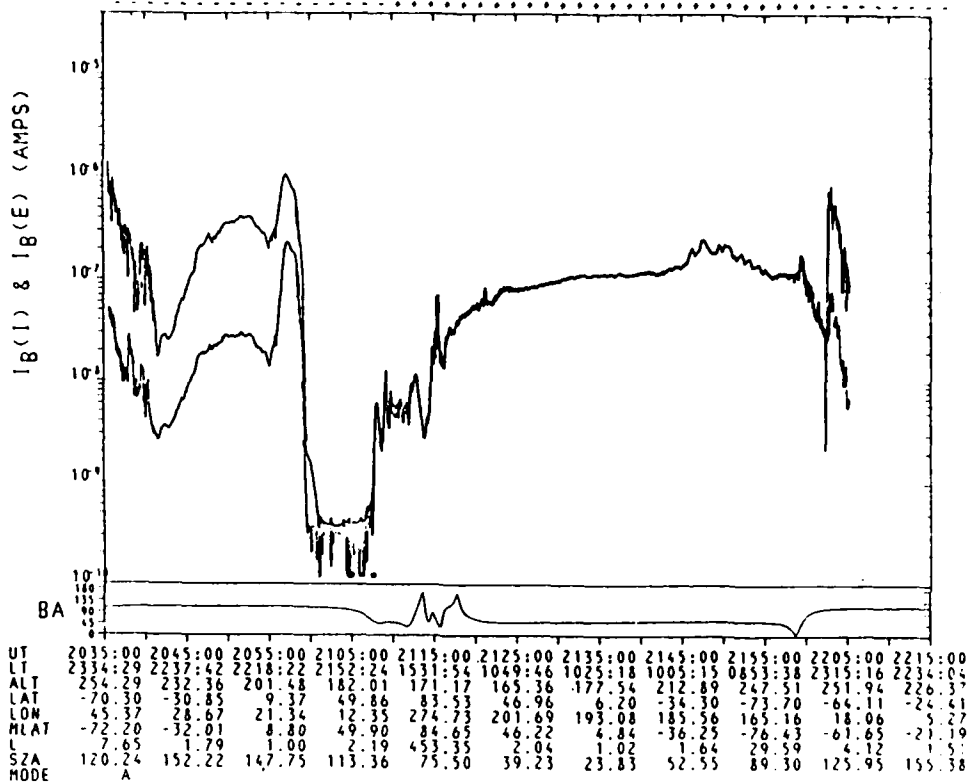


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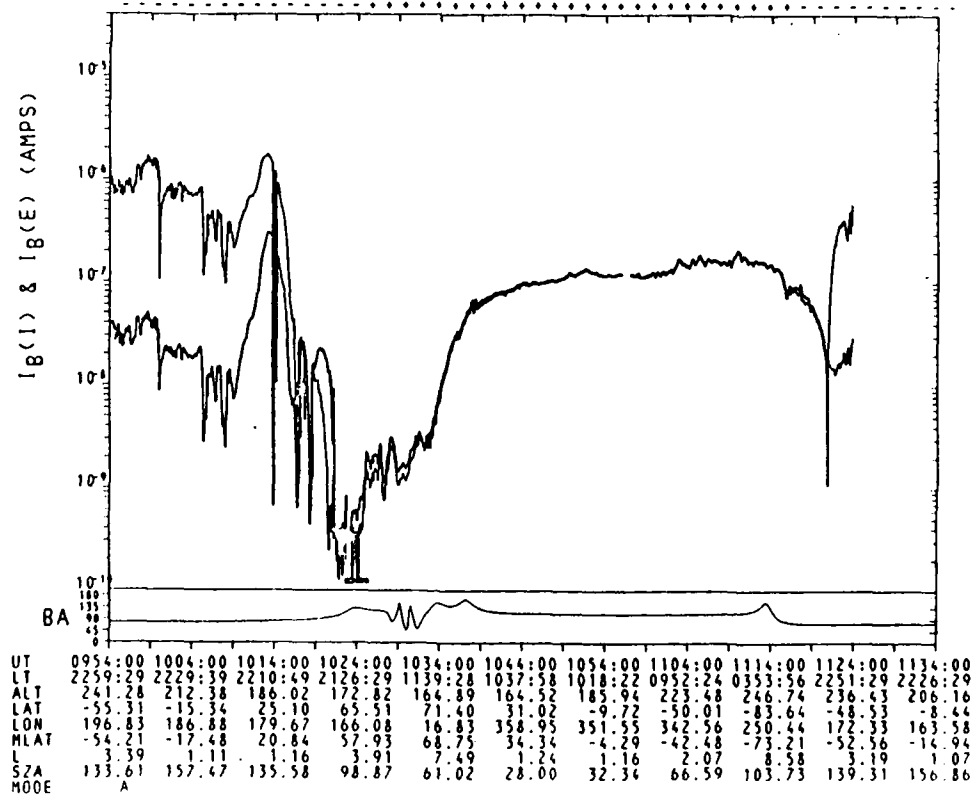


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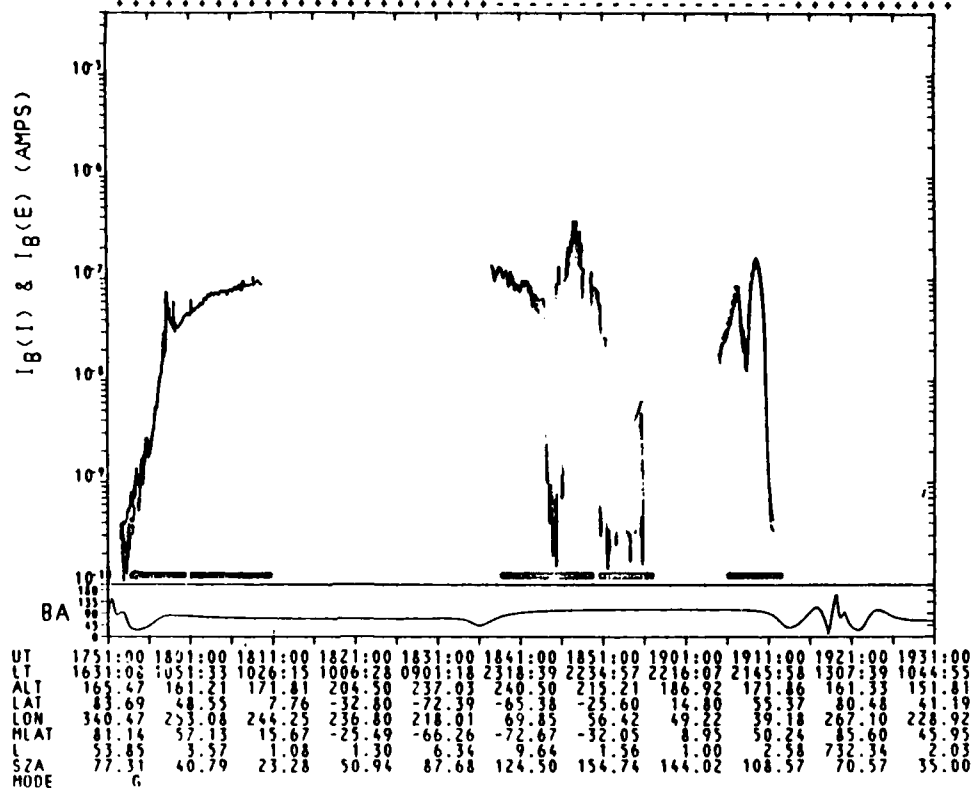


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08/26/78

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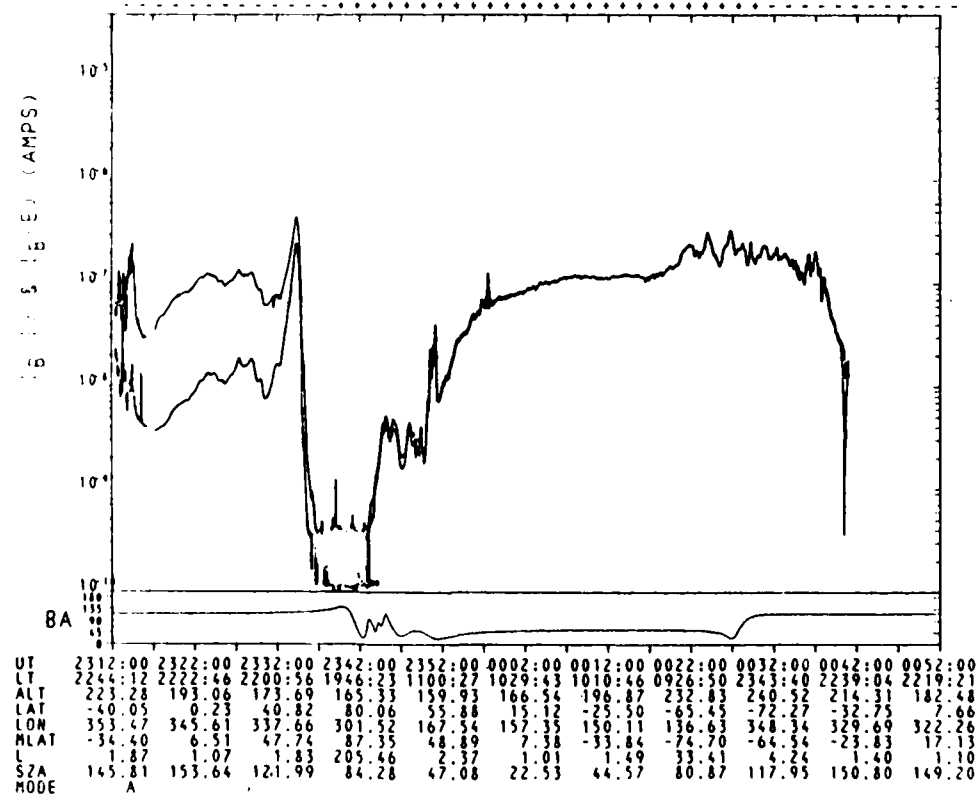


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08/26/78

REV 2650

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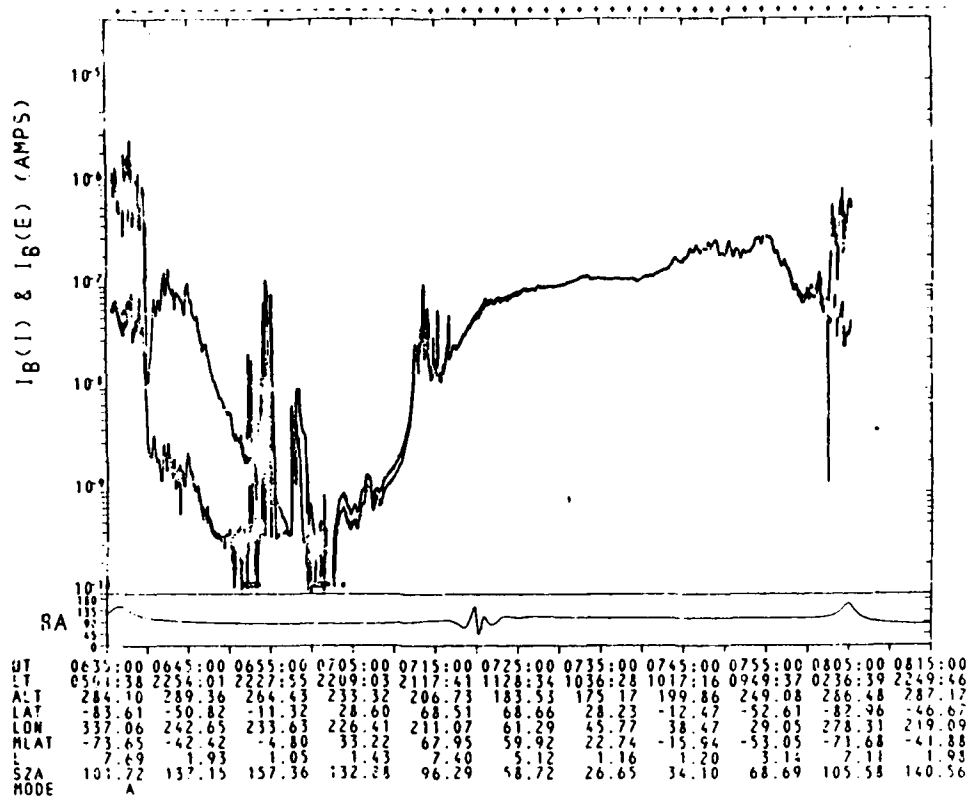


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08/27/78

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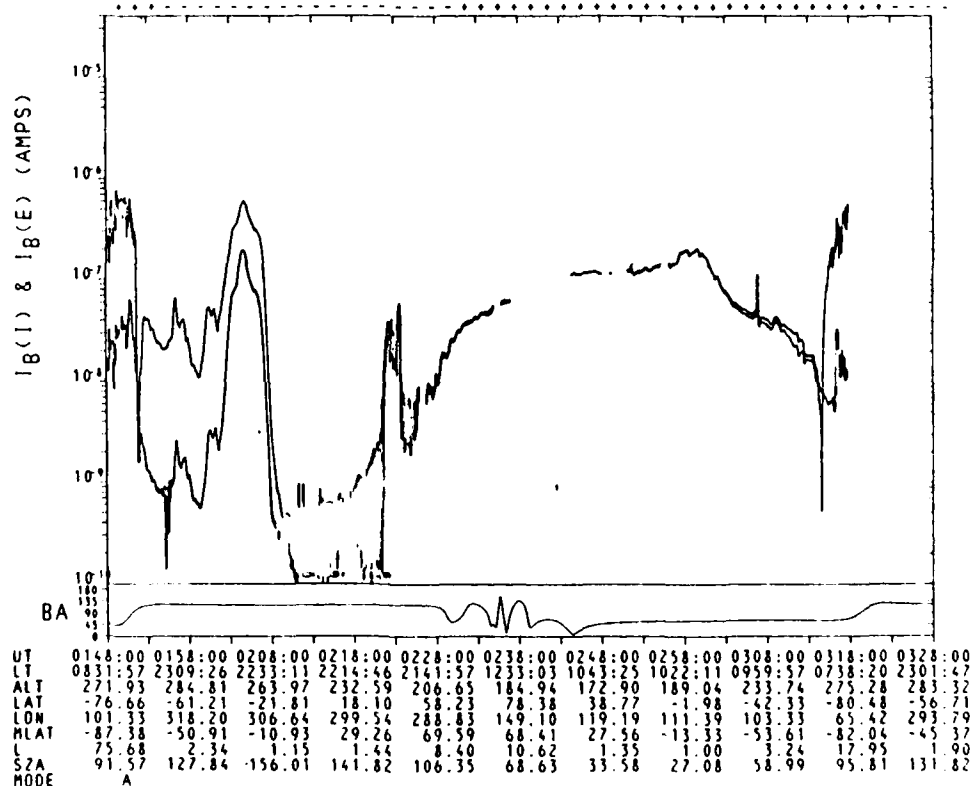


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08/28/78

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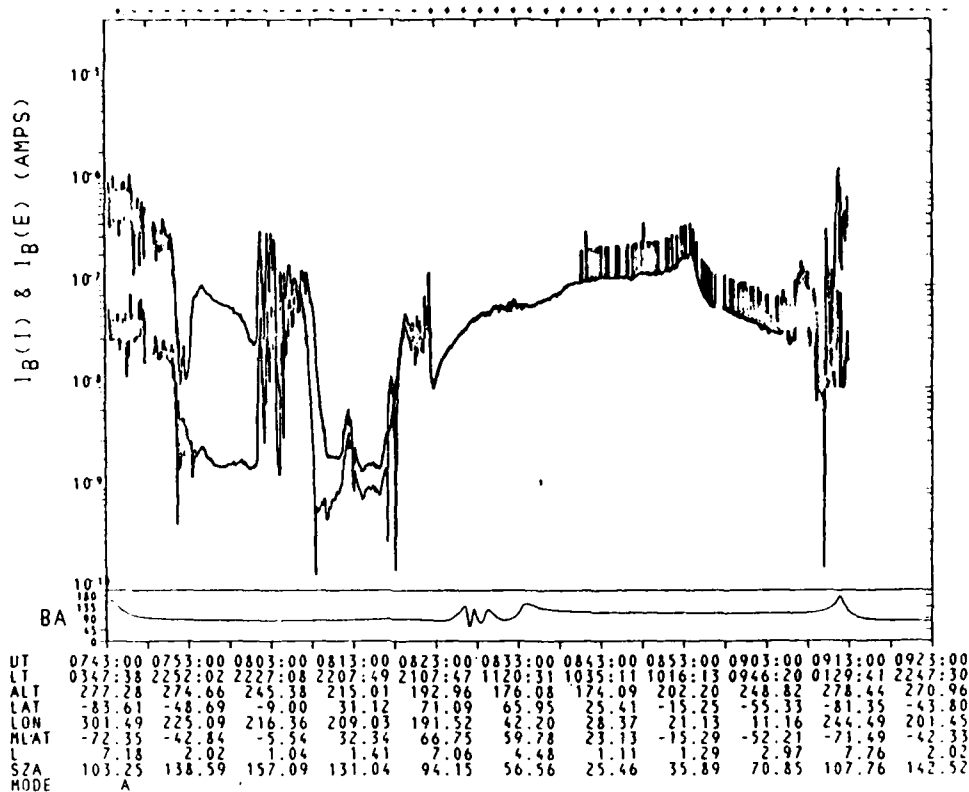


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08/28/78

REV 2672

FORMAT A

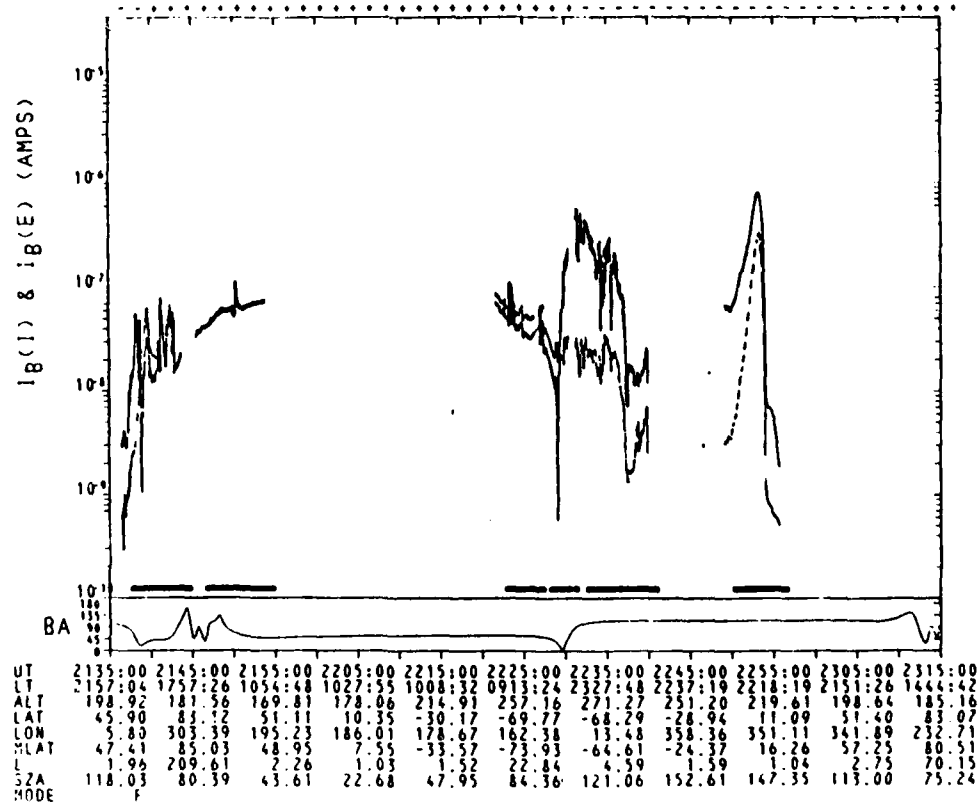


NRL 747

08/28/78

REV 2682

FORMAT C

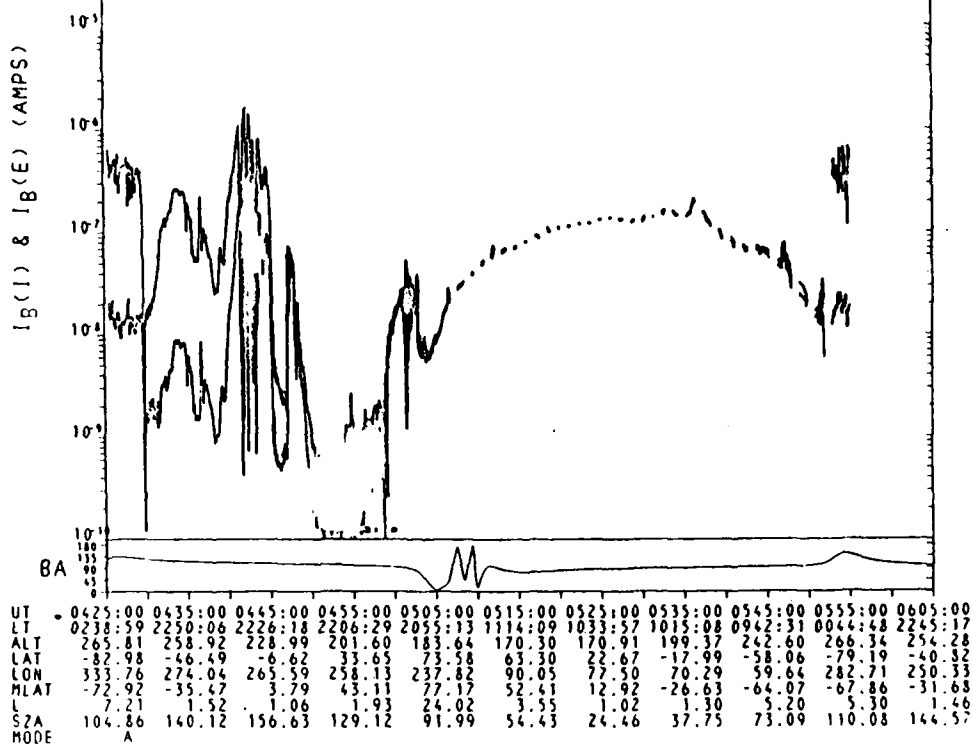


NRL 747

08/29/78

REV 2686

FORMAT A

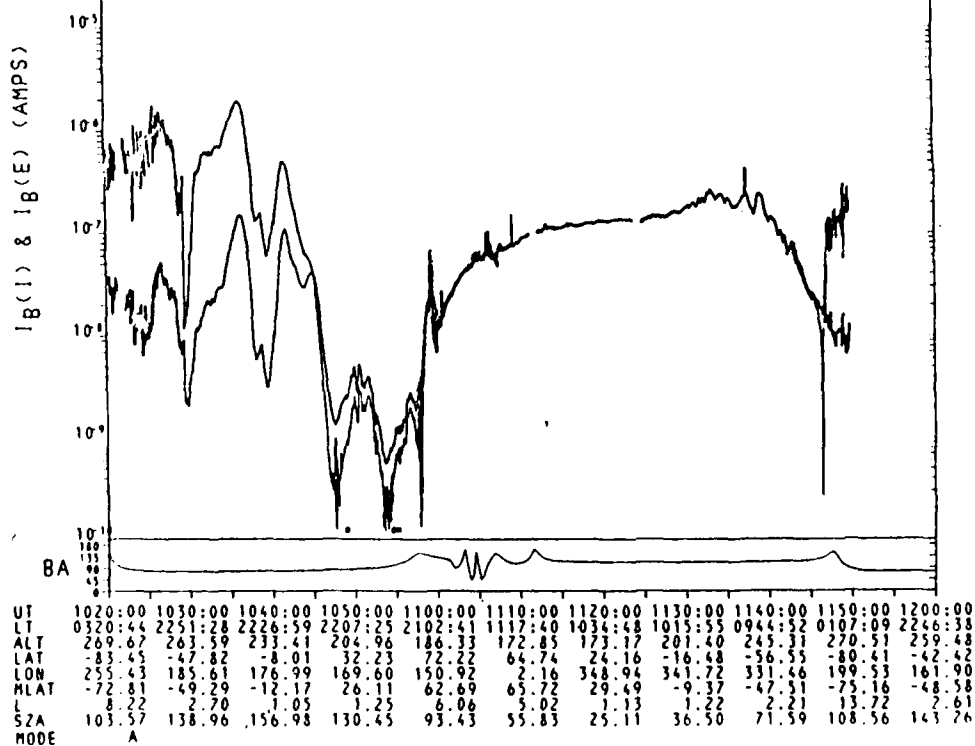


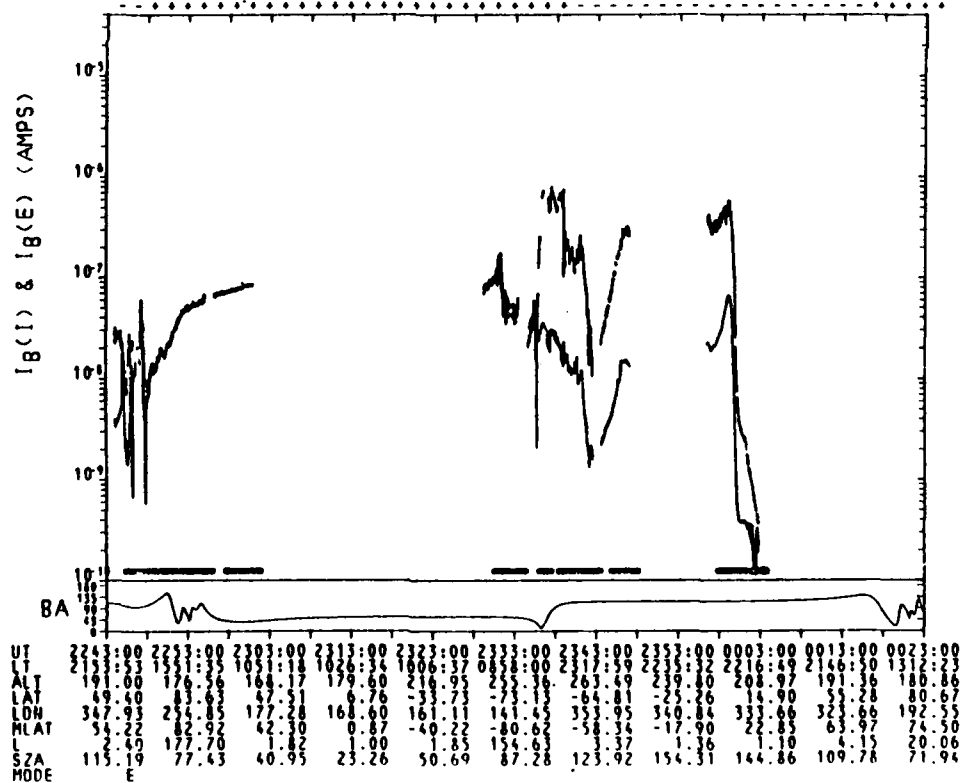
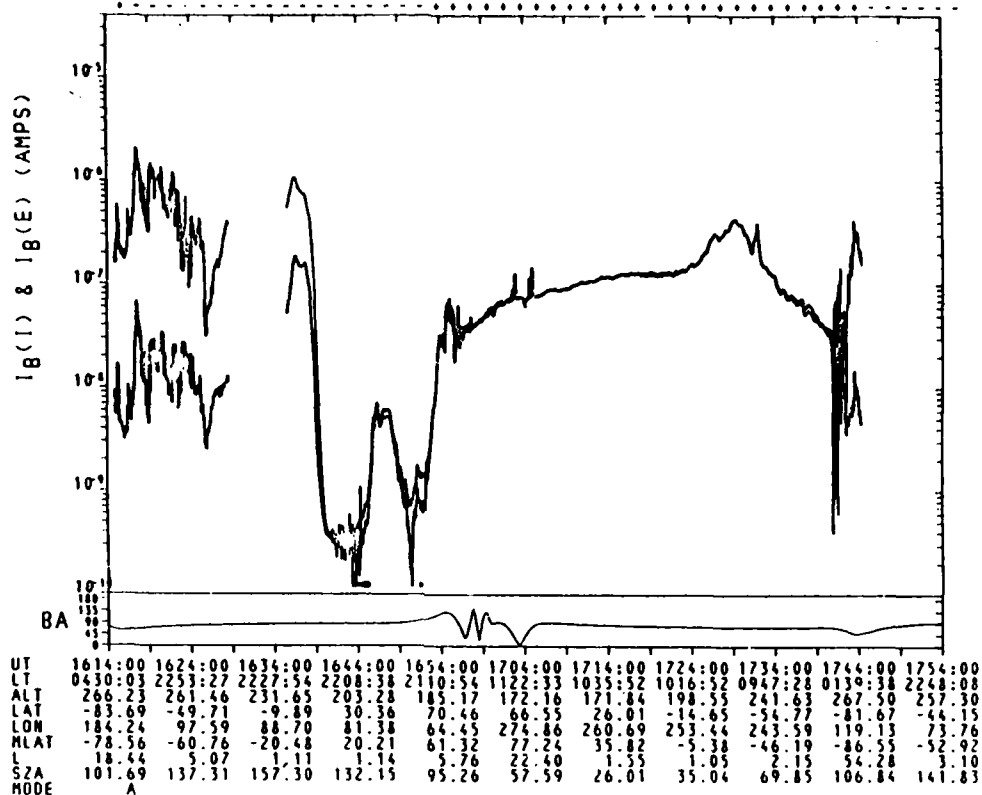
NRL 747

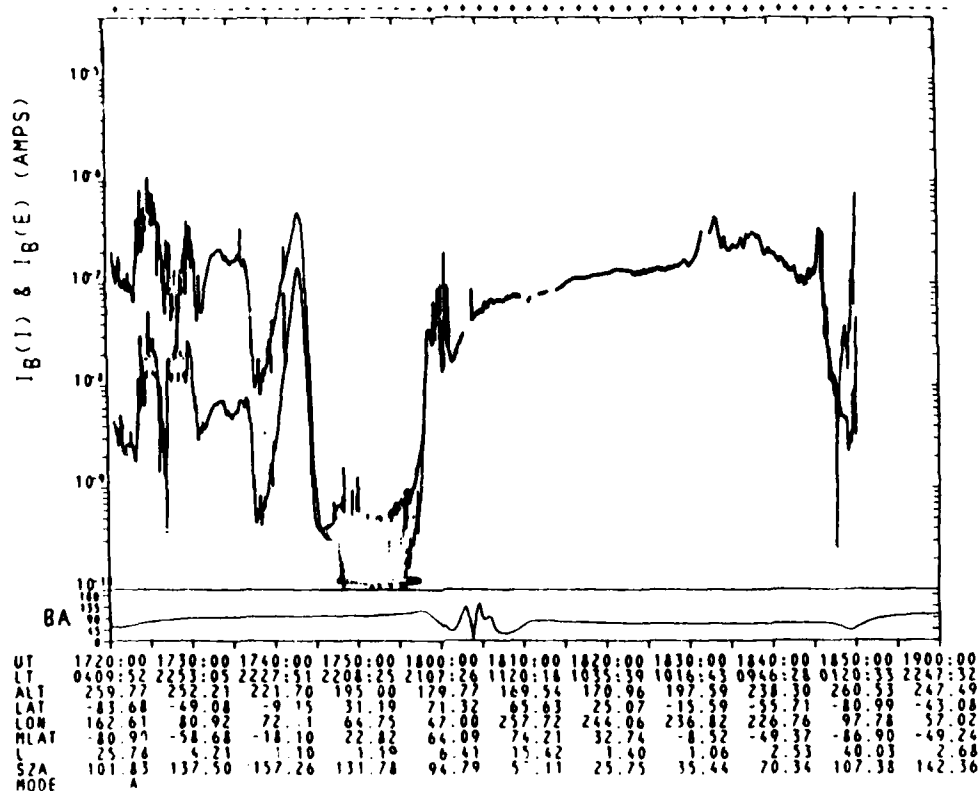
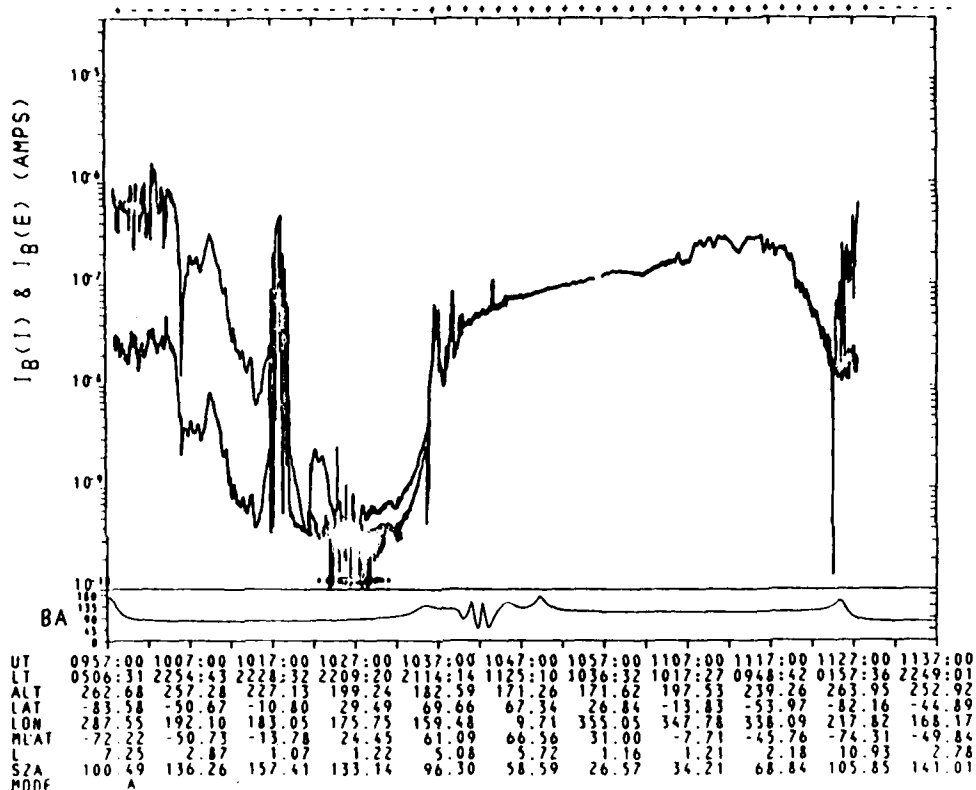
08/29/78

REV 2690

FORMAT A





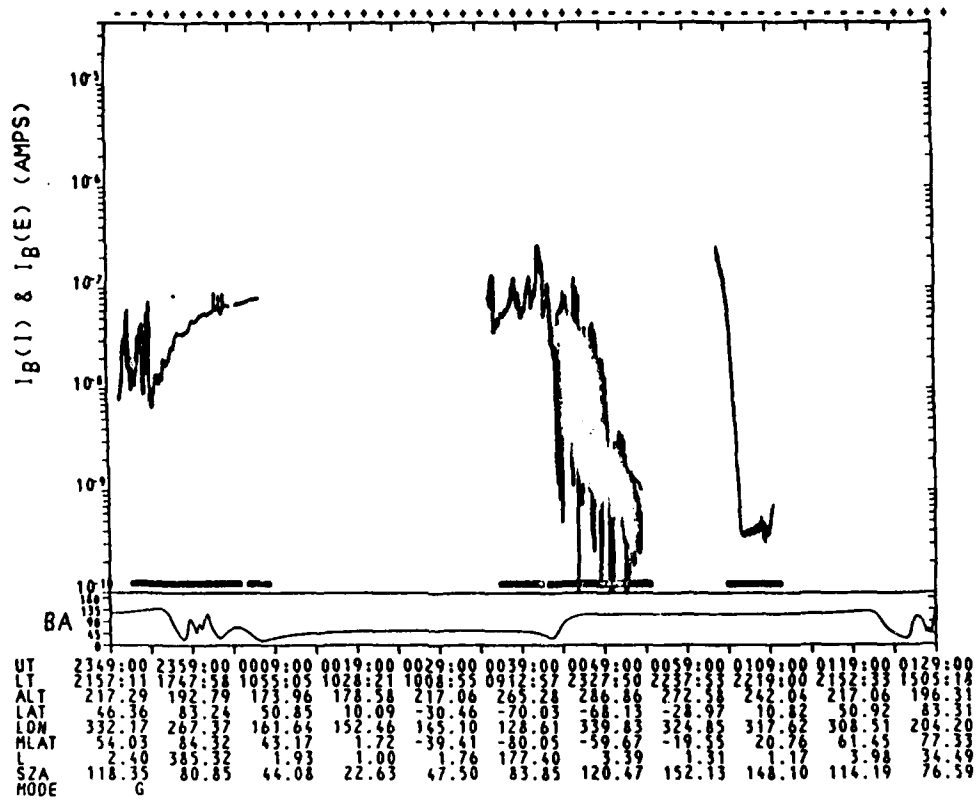


NRL 747

08/30/78

REV 2717

FORMAT C

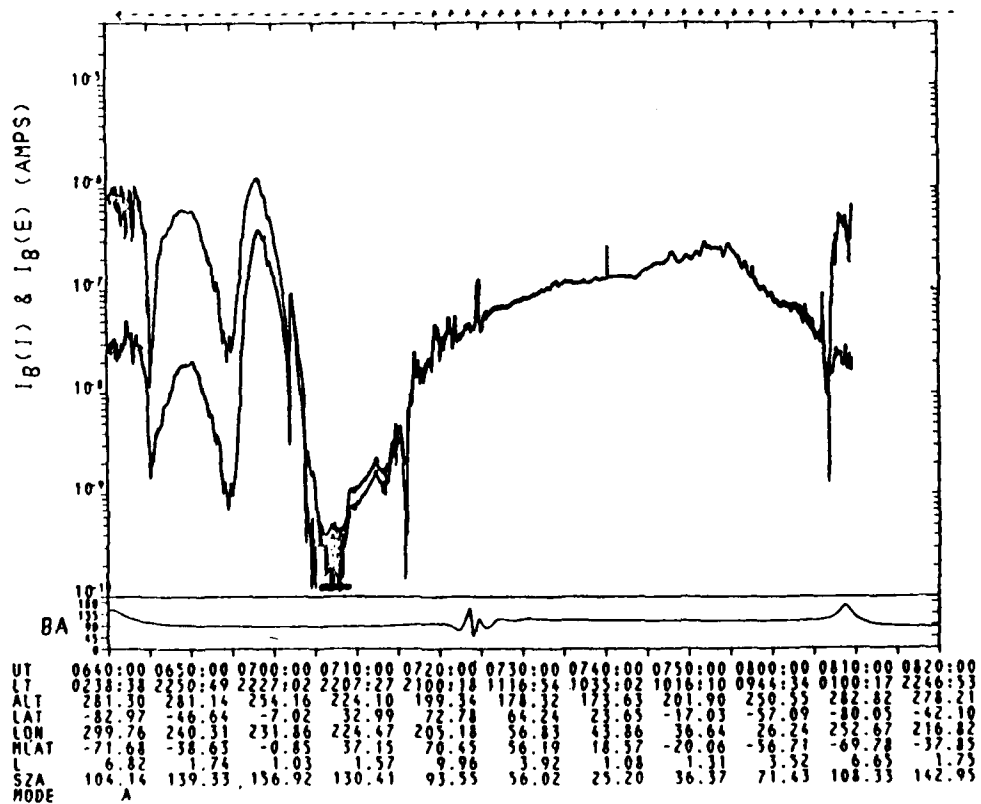


NRL 747

08/31/78

REV 2720

FORMAT A

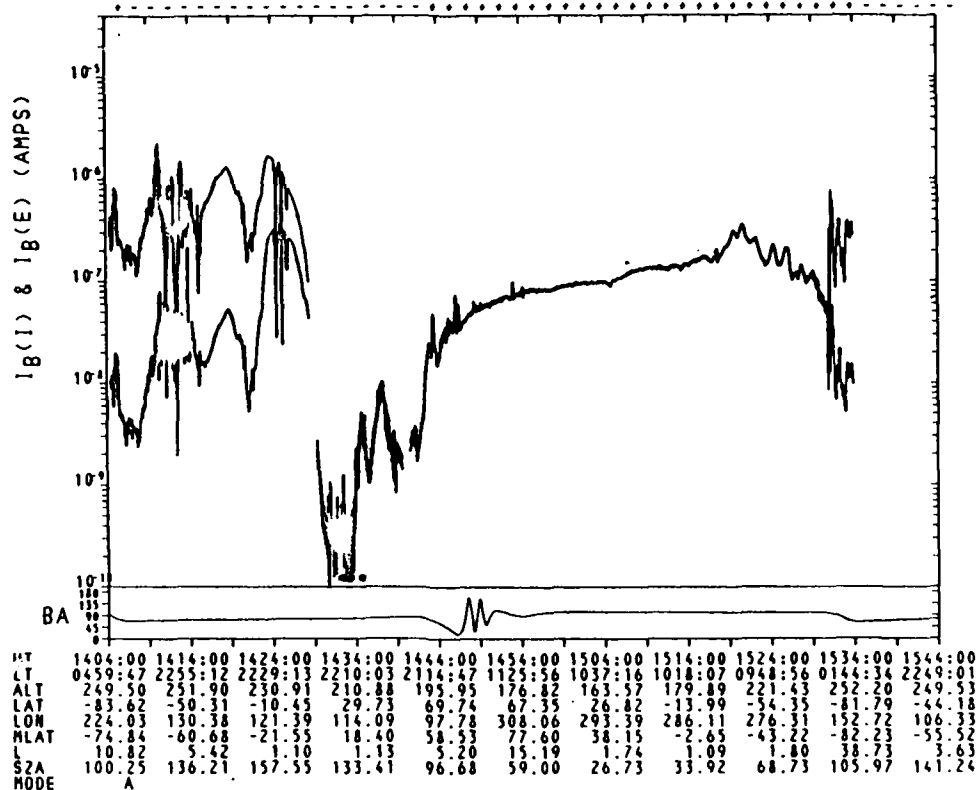


NRL 747

08/31/78

REV 2725

FORMAT A

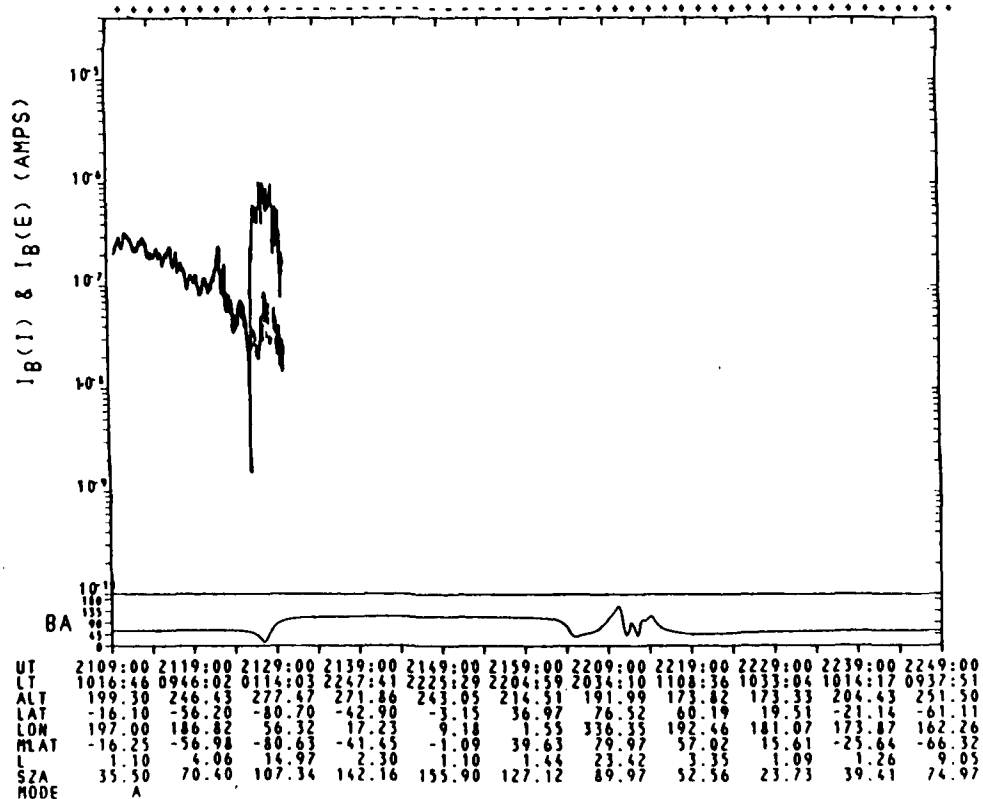


NRL 747

08/31/78

REV 2730

FORMAT A

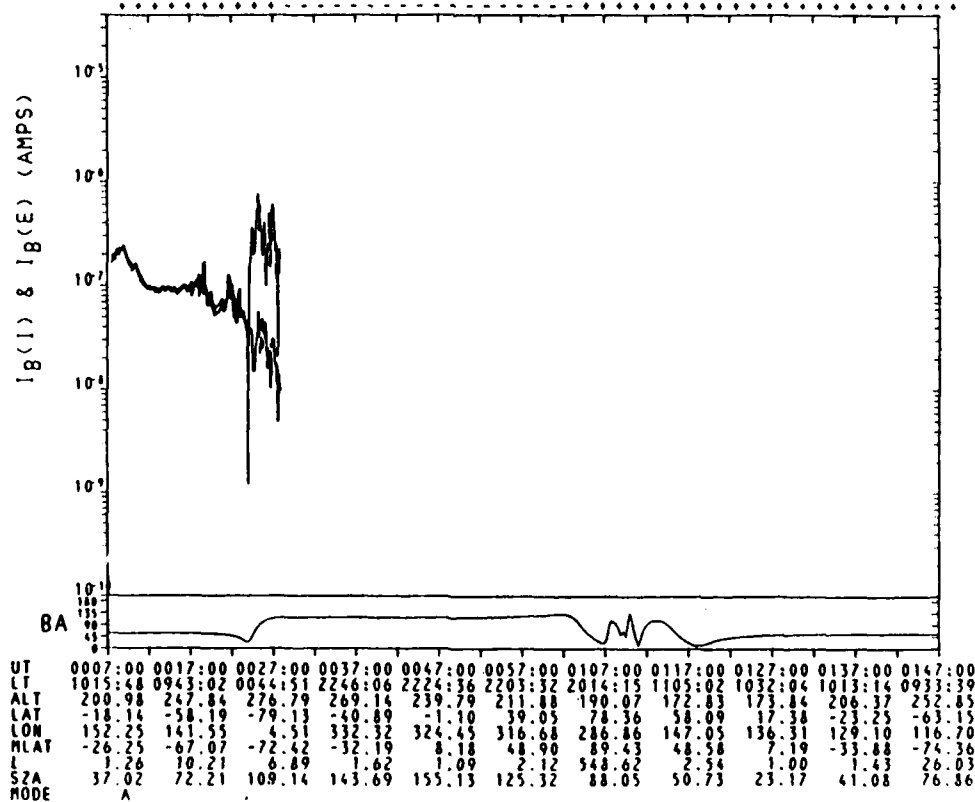
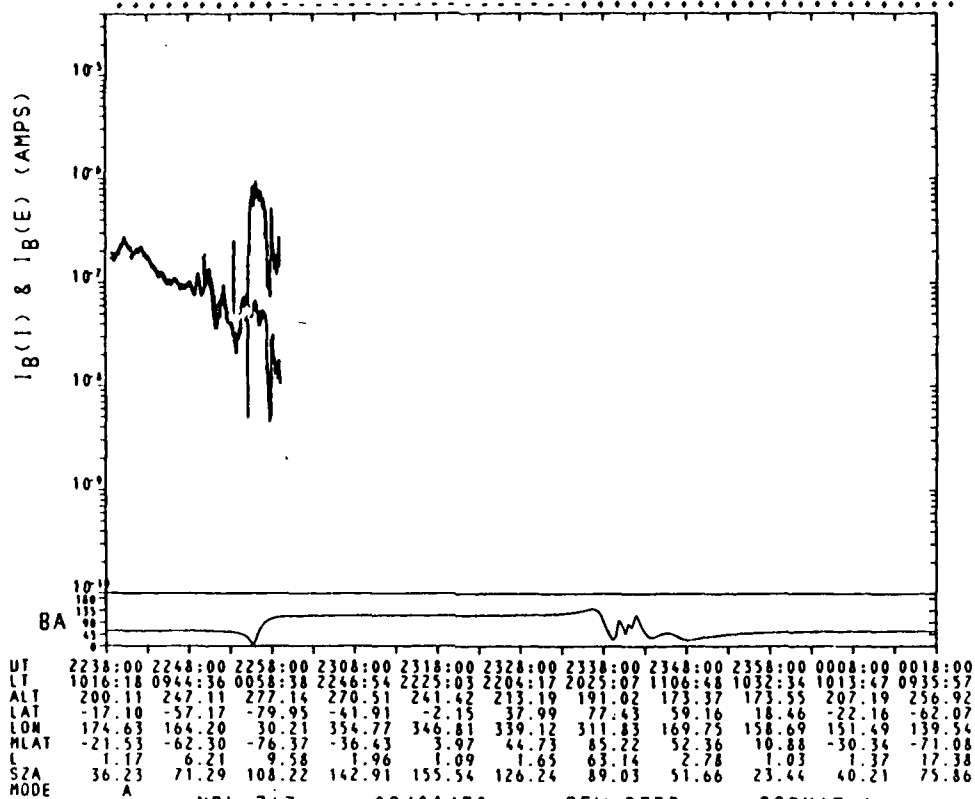


NRL 747

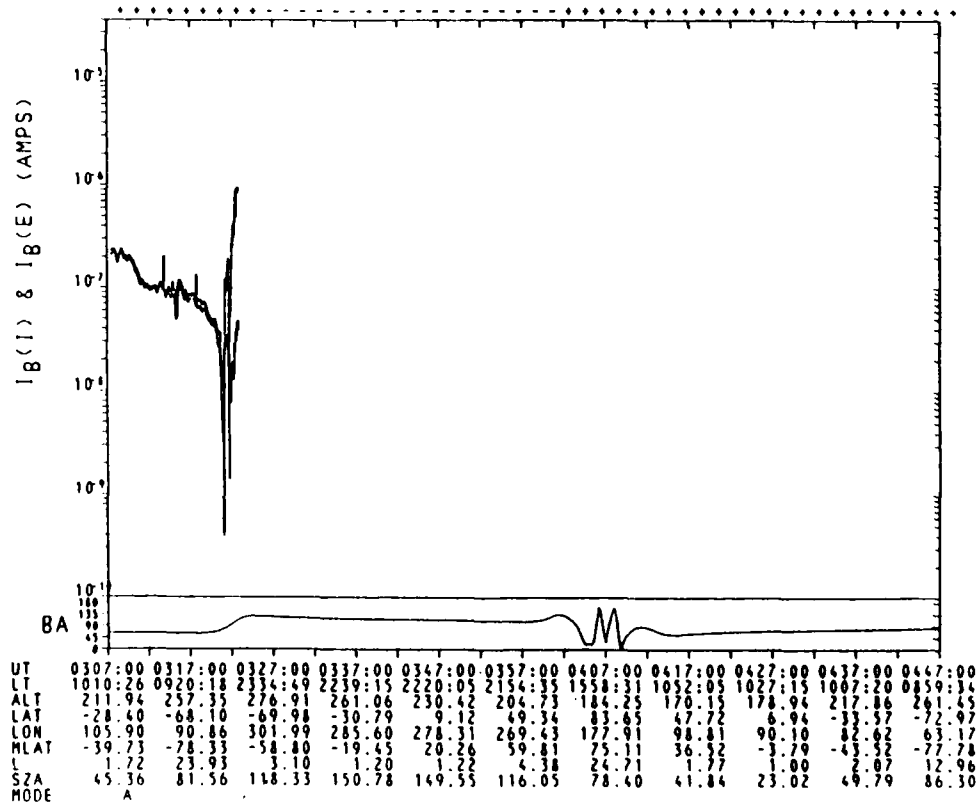
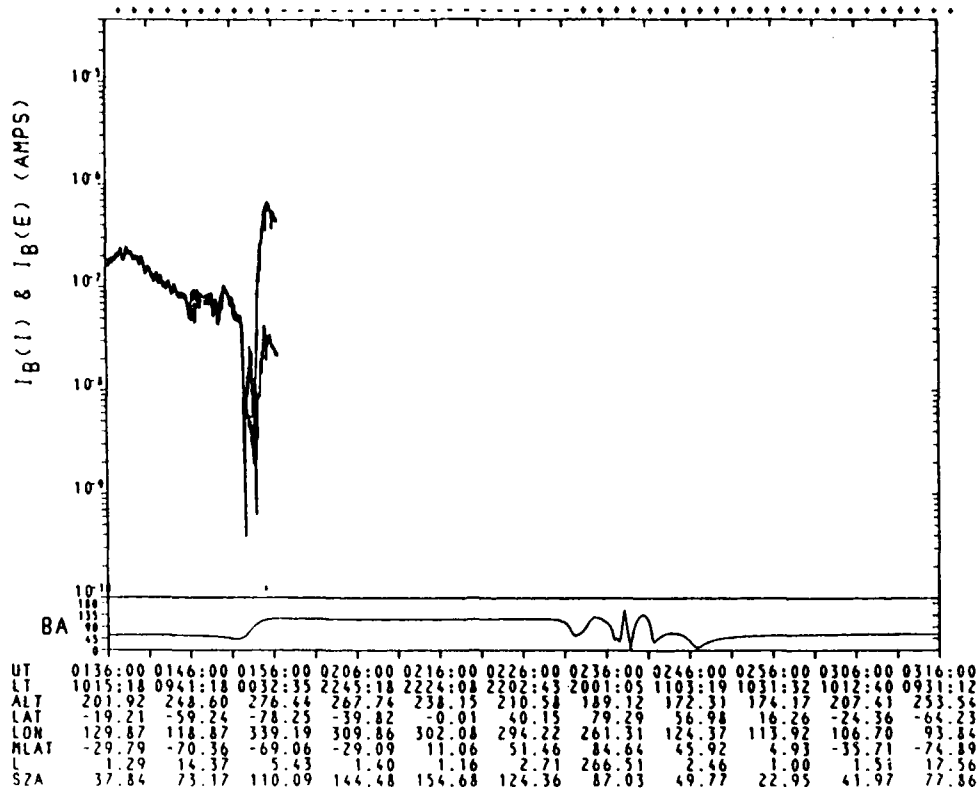
08/31/78

REV 2731

FORMAT A





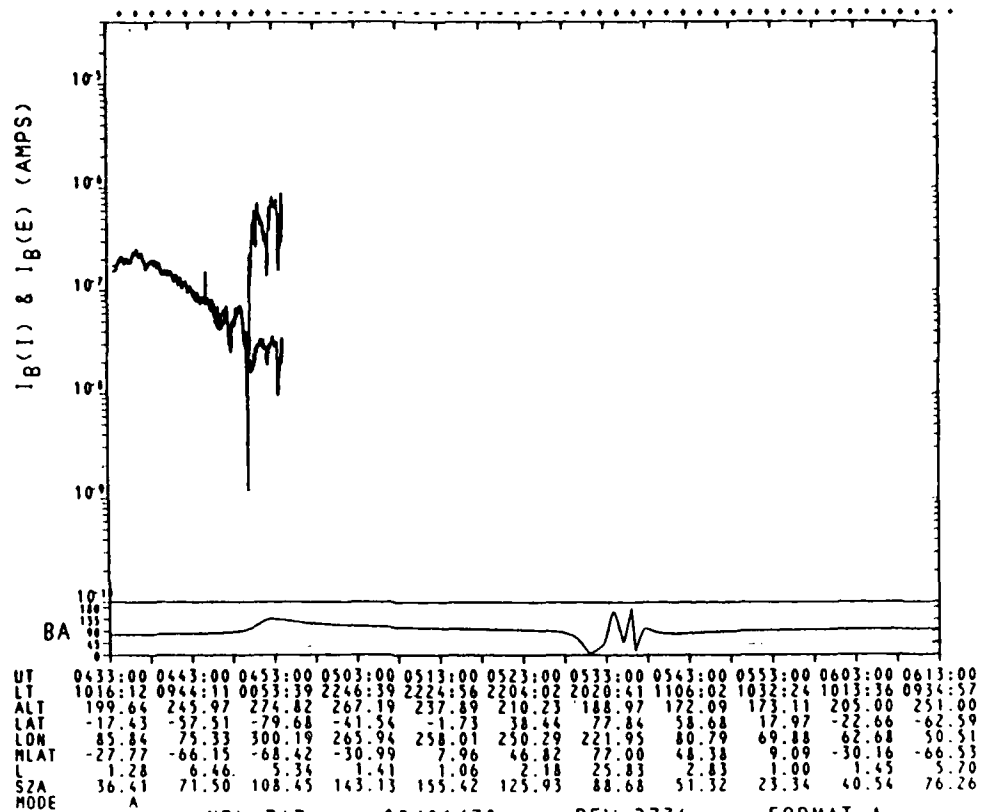


NRL 747

09/01/78

REV 2735

FORMAT A

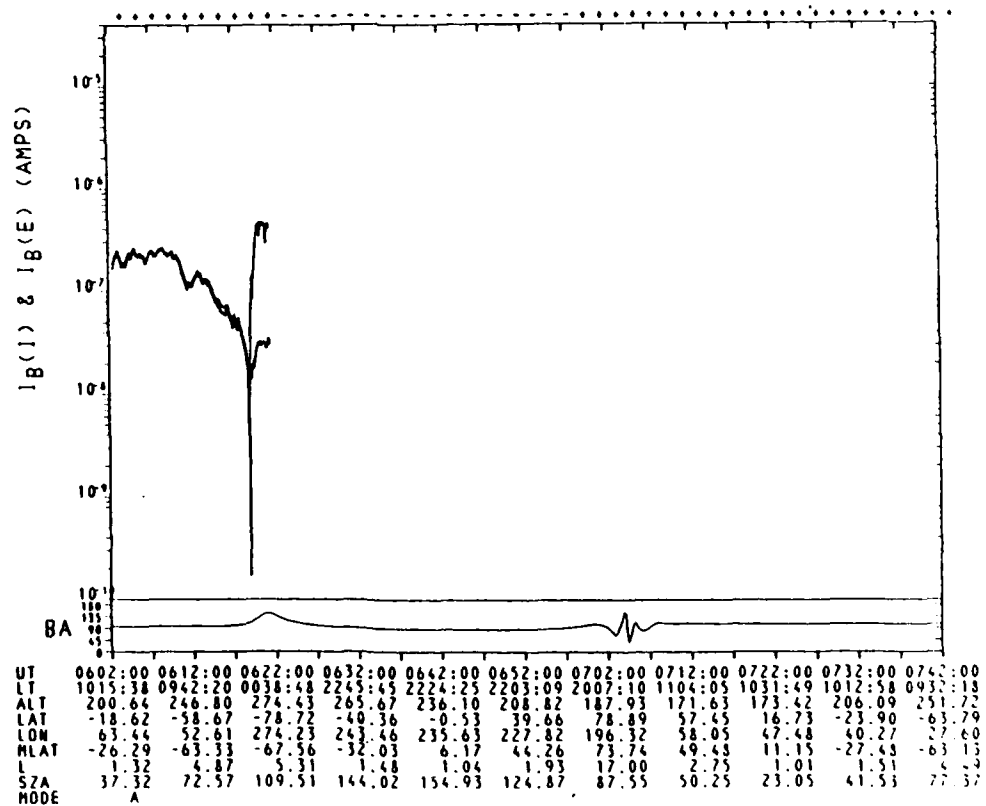


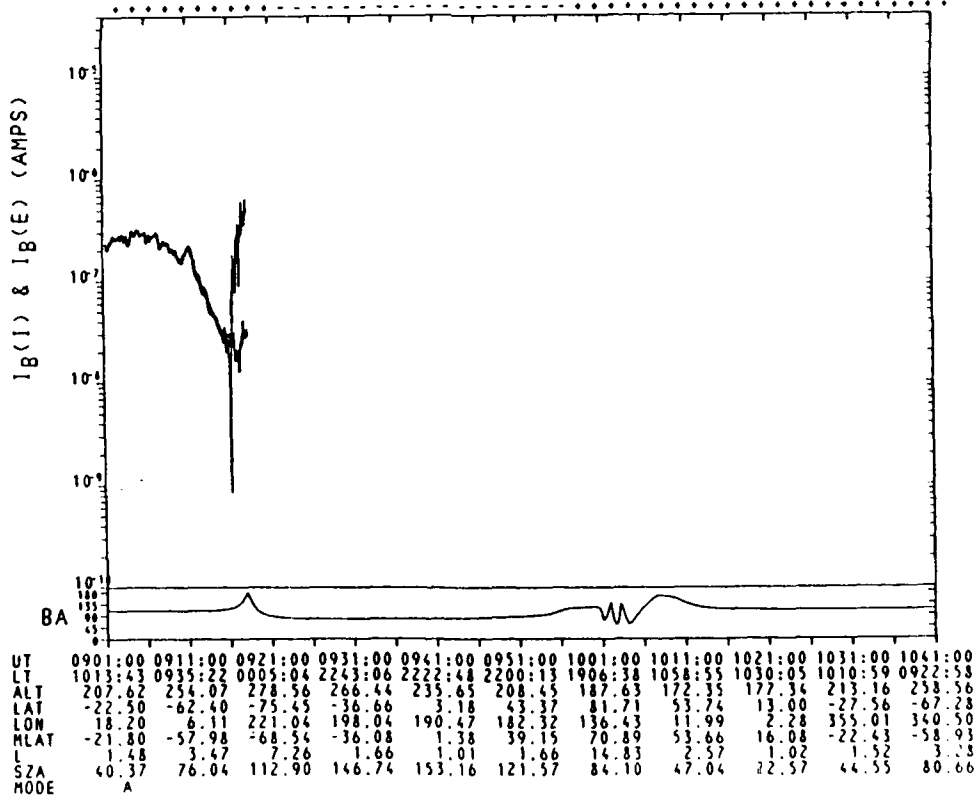
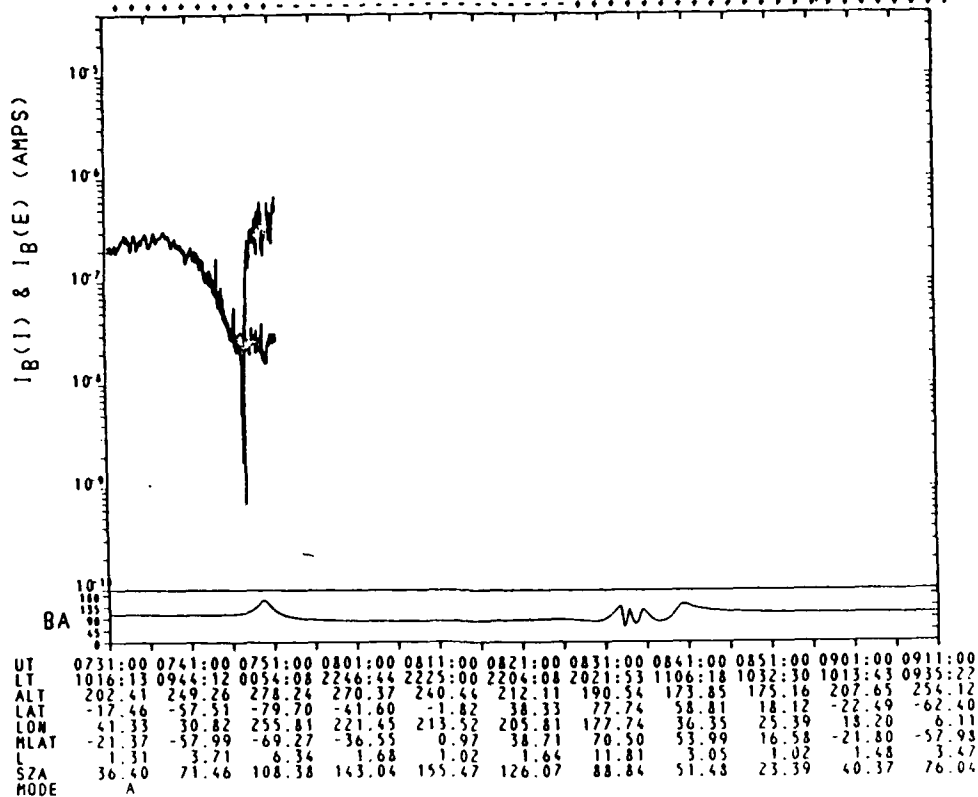
NRL 747

09/01/78

REV 2736

FORMAT A



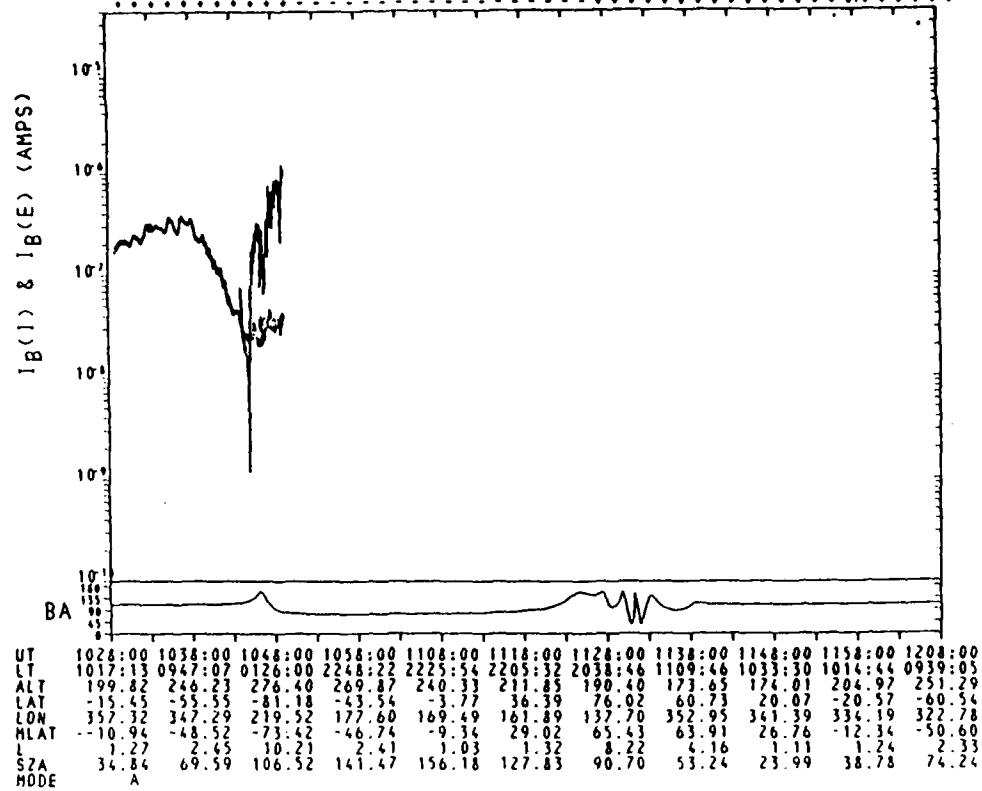


NRL 747

09/01/78

REV 2739

FORMAT A

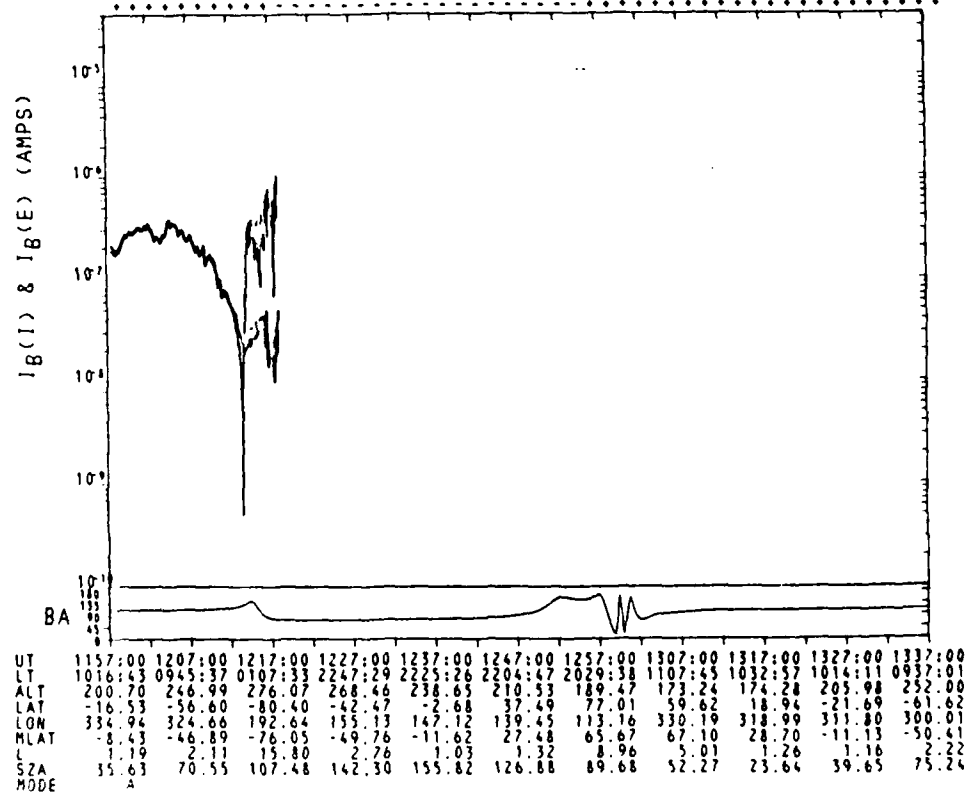


NRL 747

09/01/78

REV 2740

FORMAT A



NRL 747

09/01/78

REV 2742

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

UT	1454:00	1504:00	1514:00	1524:00	1534:00	1544:00	1554:00	1604:00	1614:00	1624:00	1634:00
LT	1017:36	0948:07	0139:03	2248:56	2226:14	2206:00	2043:11	1110:53	1033:50	1015:04	0940:10
ALT	194.48	244.33	274.38	267.90	238.43	210.19	189.29	173.13	173.32	203.66	249.47
LAT	-14.76	-54.88	-81.63	-44.17	-4.39	35.79	75.49	61.31	20.65	-20.00	-59.99
LOW	290.90	281.03	156.26	111.23	103.05	95.50	72.29	286.72	274.96	267.76	256.54
MLAT	-3.40	-43.61	-81.71	-55.52	-15.67	24.72	65.47	72.65	31.62	-9.39	-50.01
L	1.10	1.81	36.69	3.66	1.02	1.27	8.37	11.39	1.45	1.09	2.35
SZA	34.27	68.90	105.85	140.91	156.39	128.43	91.32	53.83	24.21	38.26	73.65
MODE	A										

NRL 747

09/01/78

REV 2743

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

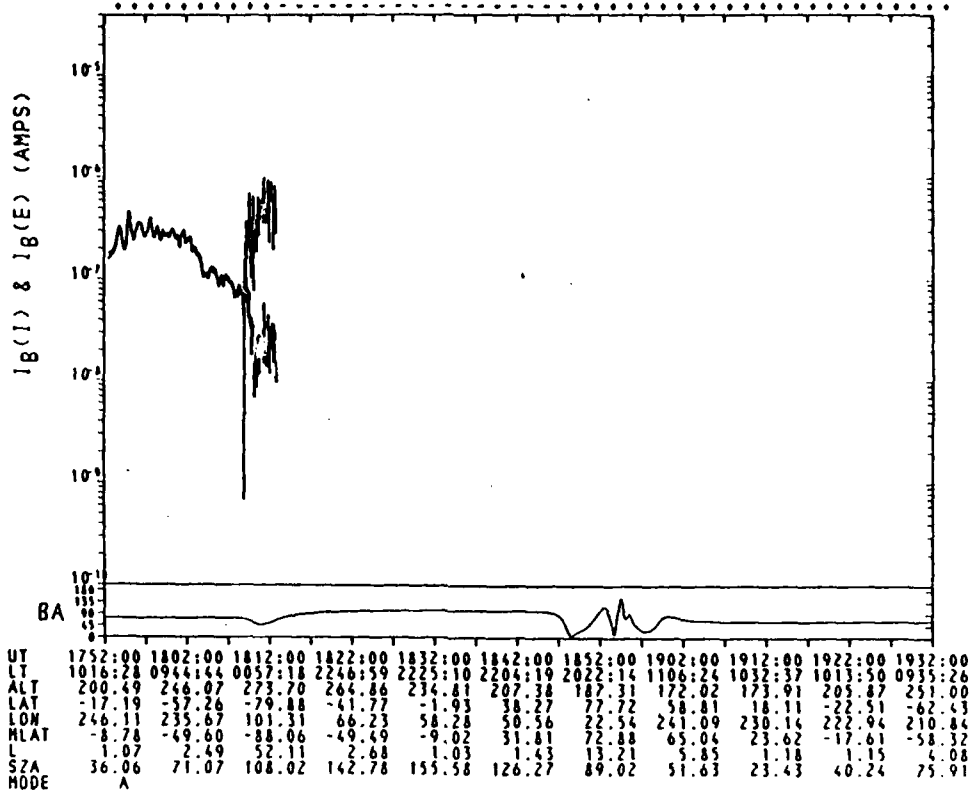
UT	1623:00	1633:00	1643:00	1653:00	1703:00	1713:00	1723:00	1733:00	1743:00	1753:00	1803:00
LT	1017:03	0946:30	0116:33	2247:57	2225:42	2205:11	2033:45	1108:36	1033:14	1014:28	0937:56
ALT	199.47	245.21	274.08	266.42	236.65	208.80	188.32	172.47	173.60	204.75	250.25
LAT	-15.95	-56.05	-80.81	-42.99	-3.18	37.01	76.60	60.08	19.40	-21.23	-61.19
LOW	268.51	258.37	128.38	88.73	80.67	73.04	47.68	263.89	252.55	245.36	233.72
MLAT	-5.31	-45.97	-86.00	-53.45	-13.12	27.61	68.76	69.79	28.32	-12.88	-53.66
L	1.07	2.04	71.80	3.21	1.02	1.33	10.02	9.47	1.29	1.11	2.95
SZA	35.14	69.96	106.91	141.83	156.02	127.37	90.19	52.74	23.80	39.23	74.76
MODE	A										

NRL 747

09/01/78

REV 2744

FORMAT A

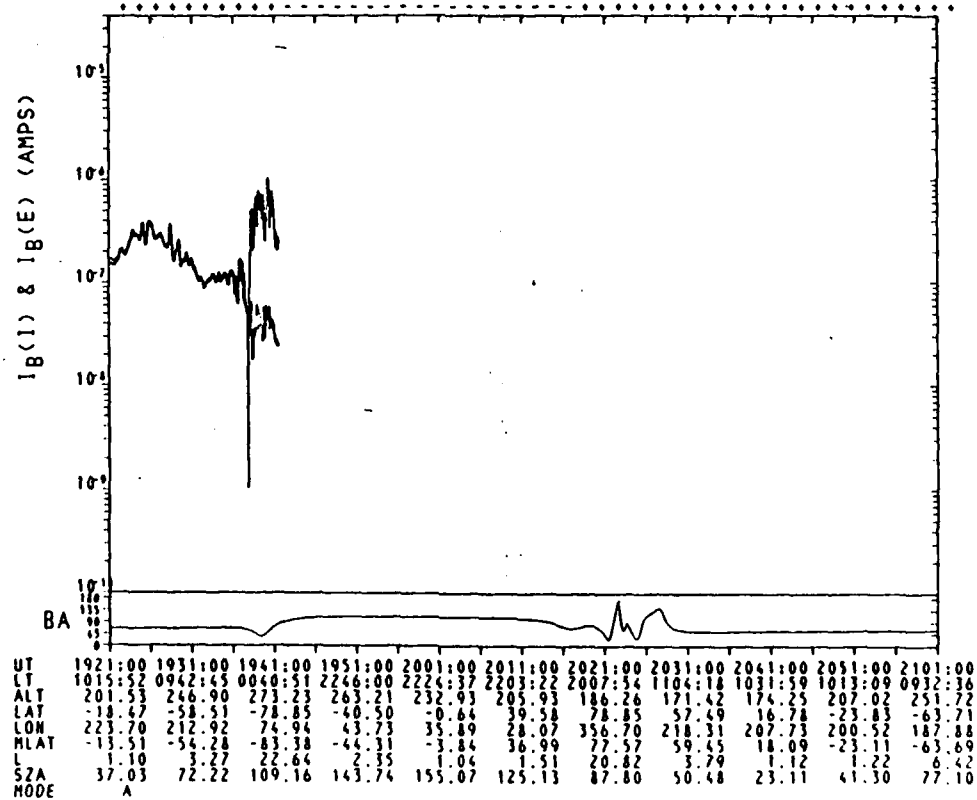


NRL 747

09/01/78

REV 2745

FORMAT A

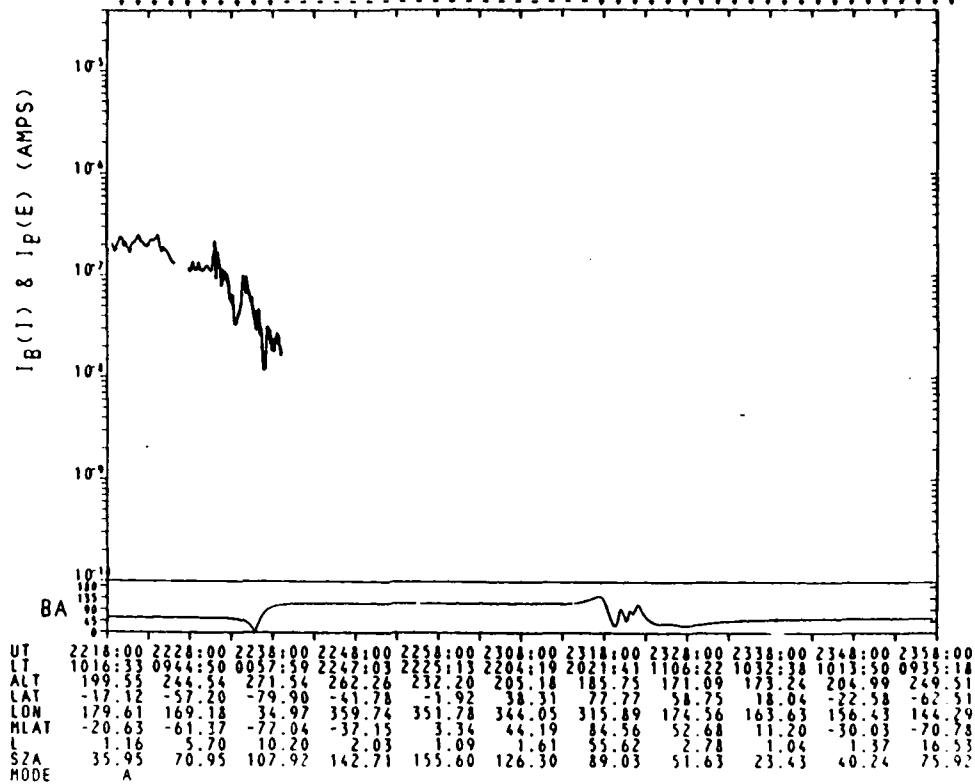


NRL 747

09/01/78

REV 2747

FORMAT A

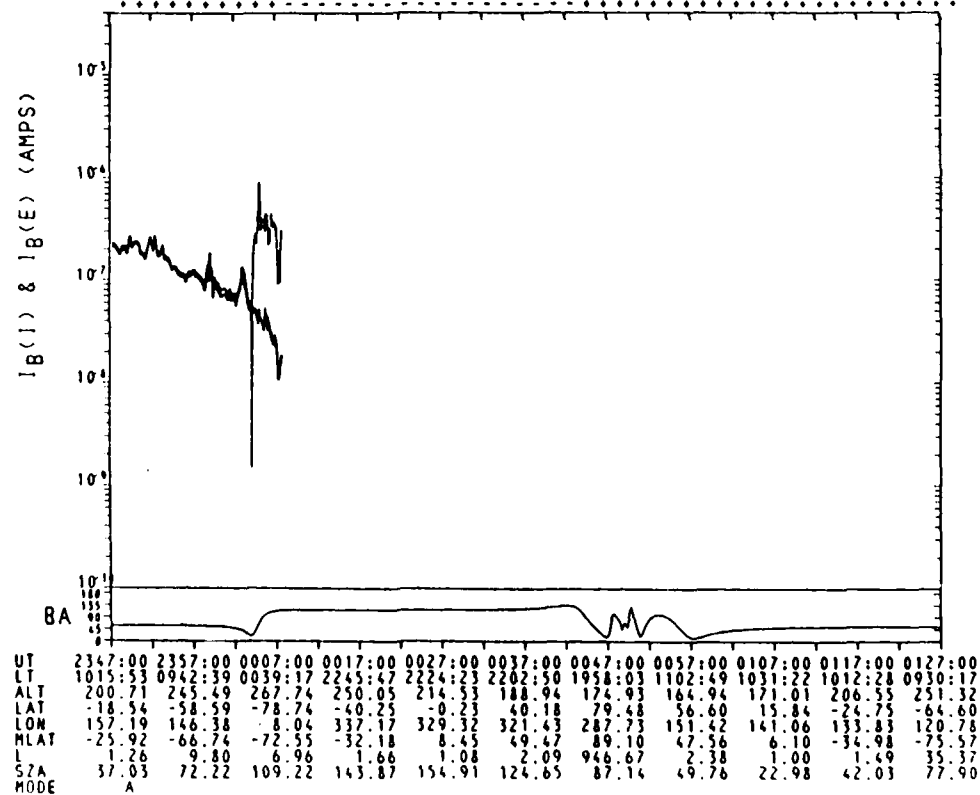


NRL 747

09/01/78

REV 2748

FORMAT A

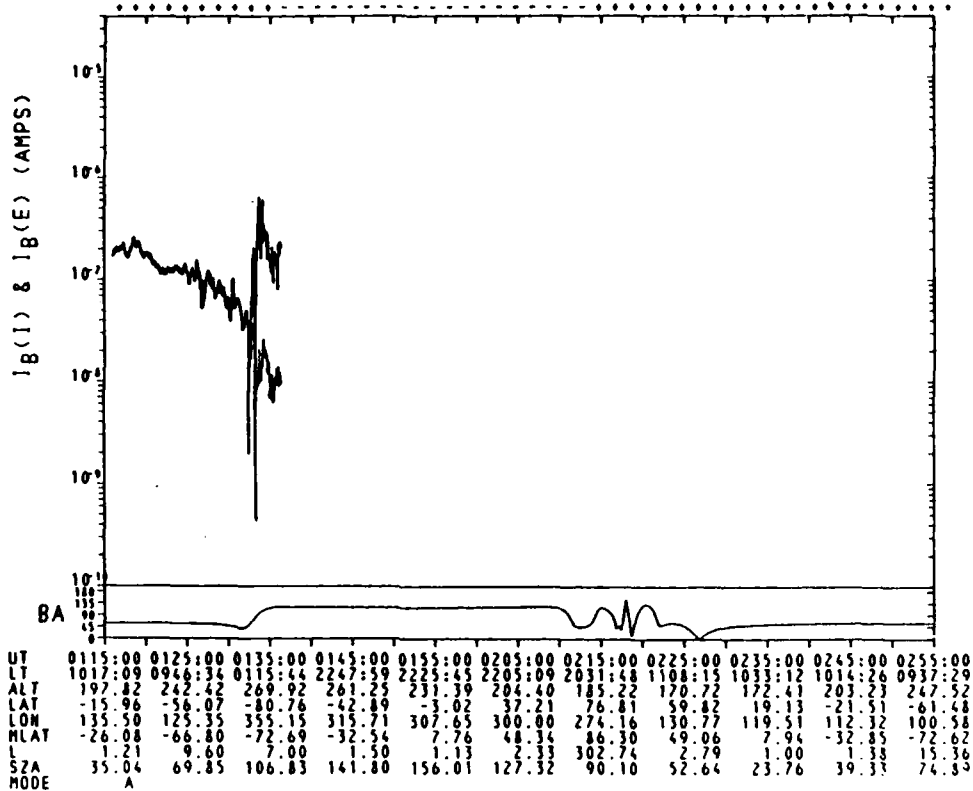


NRL 747

09/02/78

REV 2749

FORMAT A

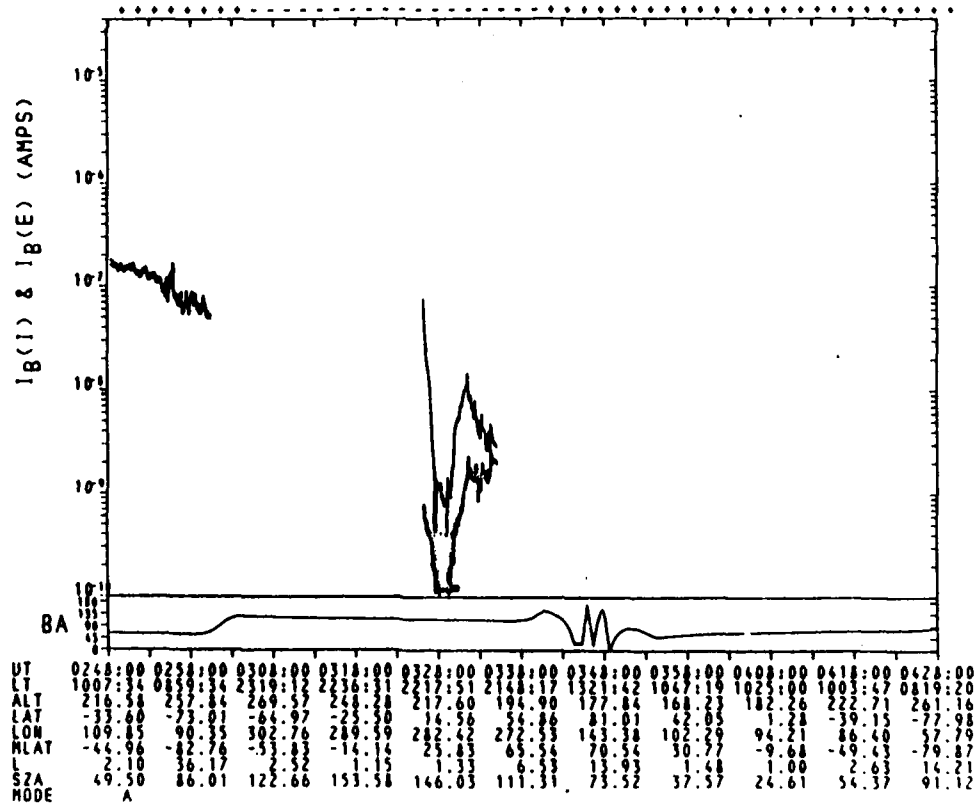


NRL 747

09/02/78

REV 2750

FORMAT A



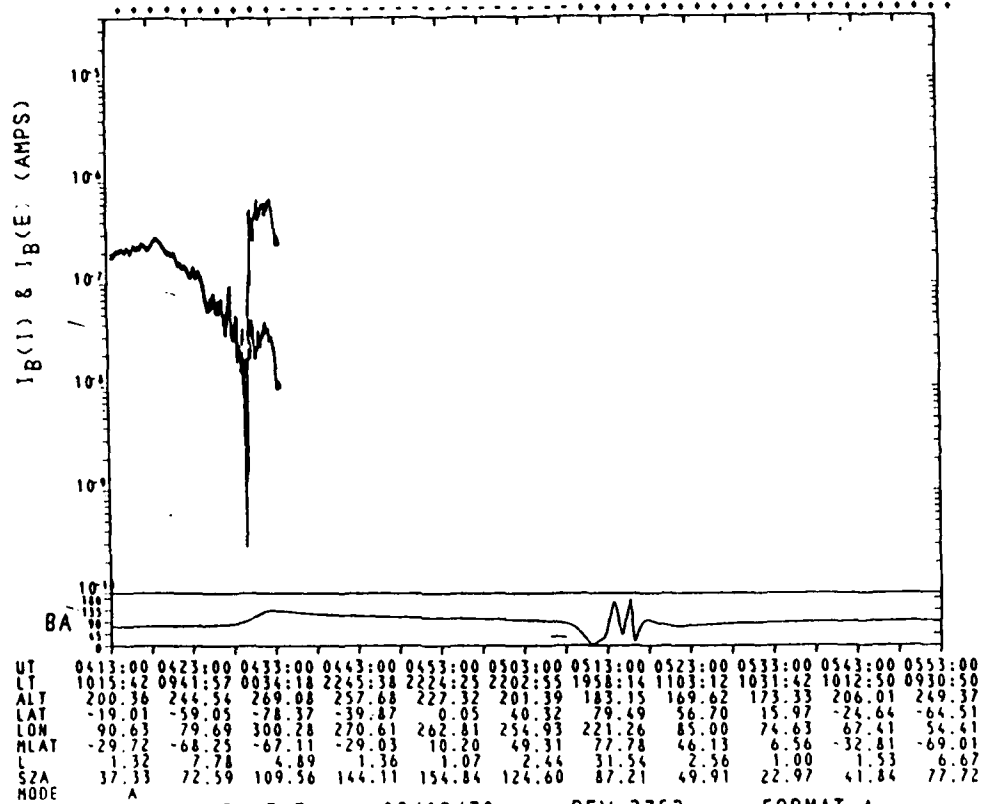


NRL 747

09/02/78

REV 2751

FORMAT A

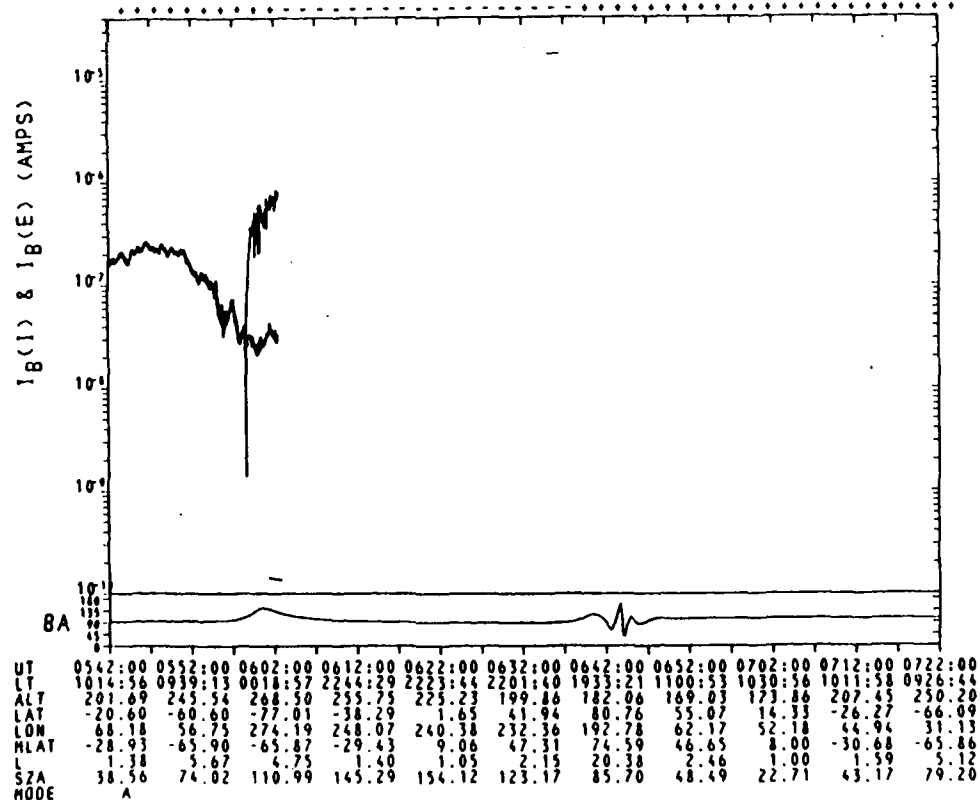


NRL 747

09/02/78

REV 2752

FORMAT A

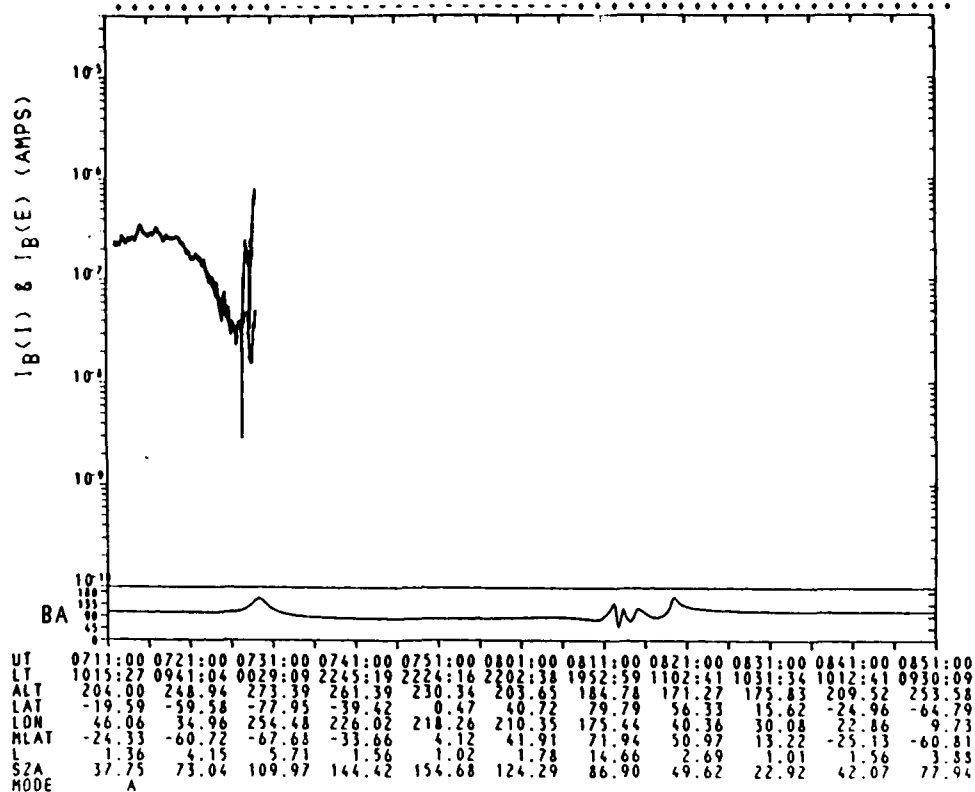


NRL 747

09/02/78

REV 2753

FORMAT A

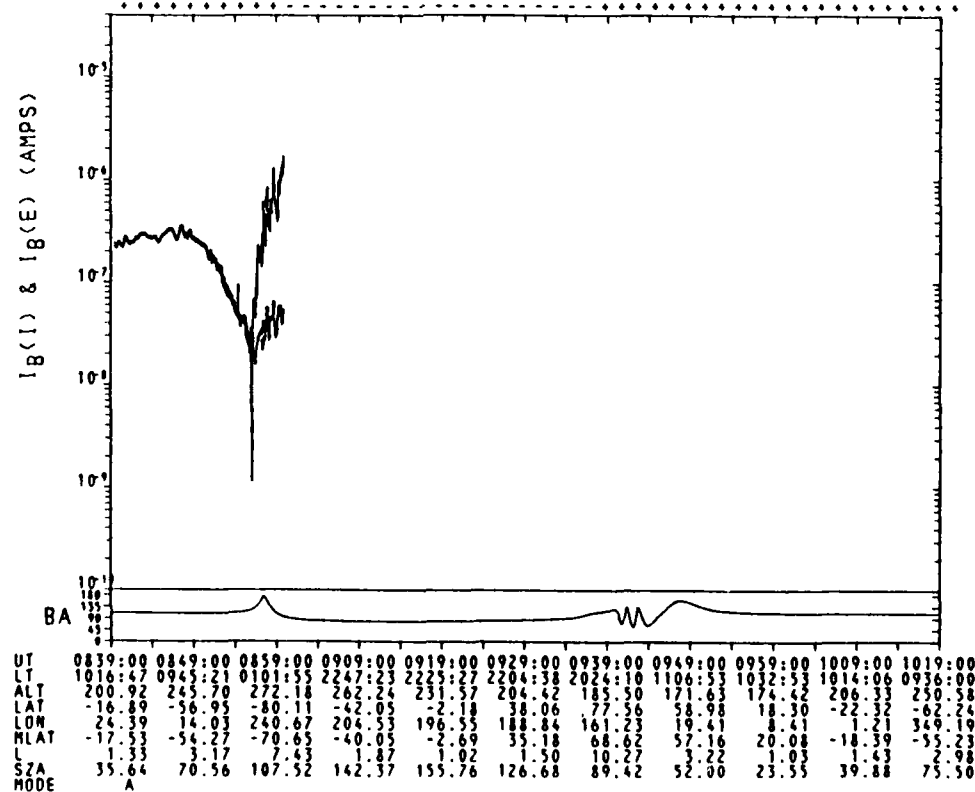


NRL 747

09/02/78

REV 2754

FORMAT A

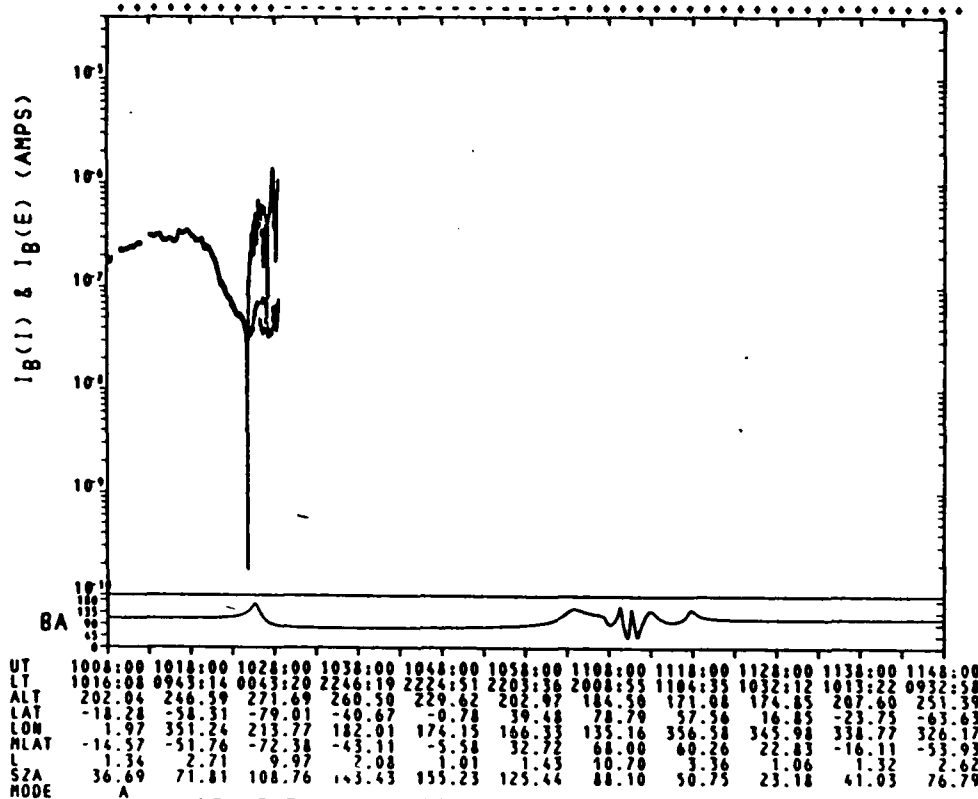


NRL 747

09/02/78

REV 2755

FORMAT A

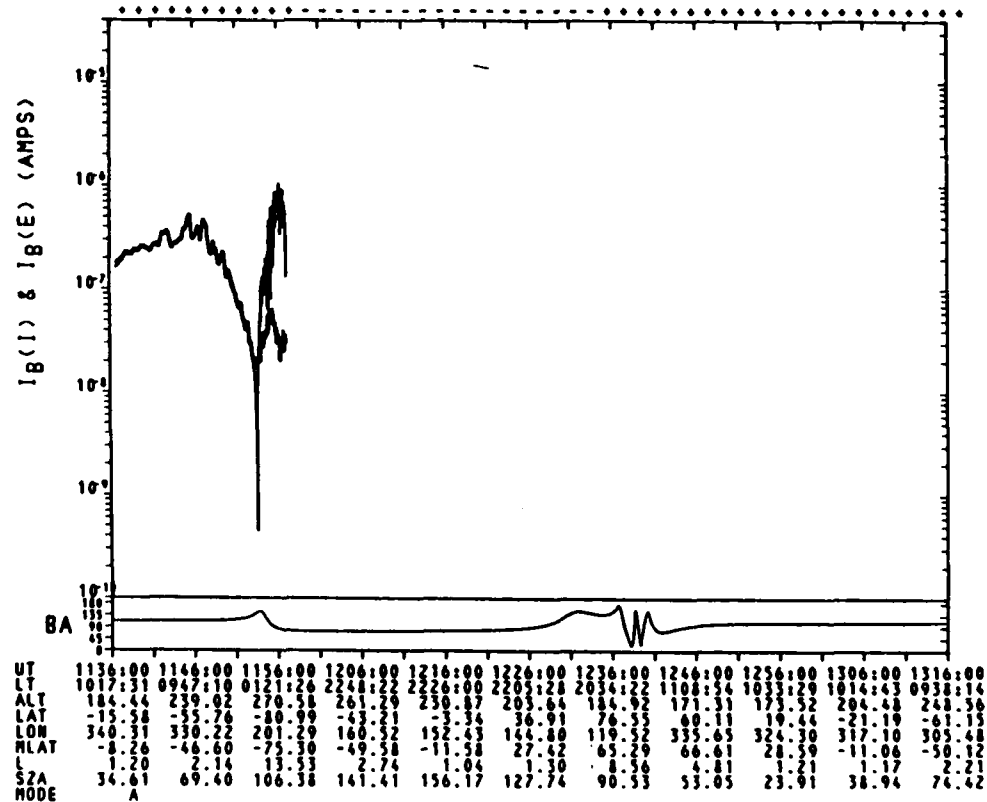


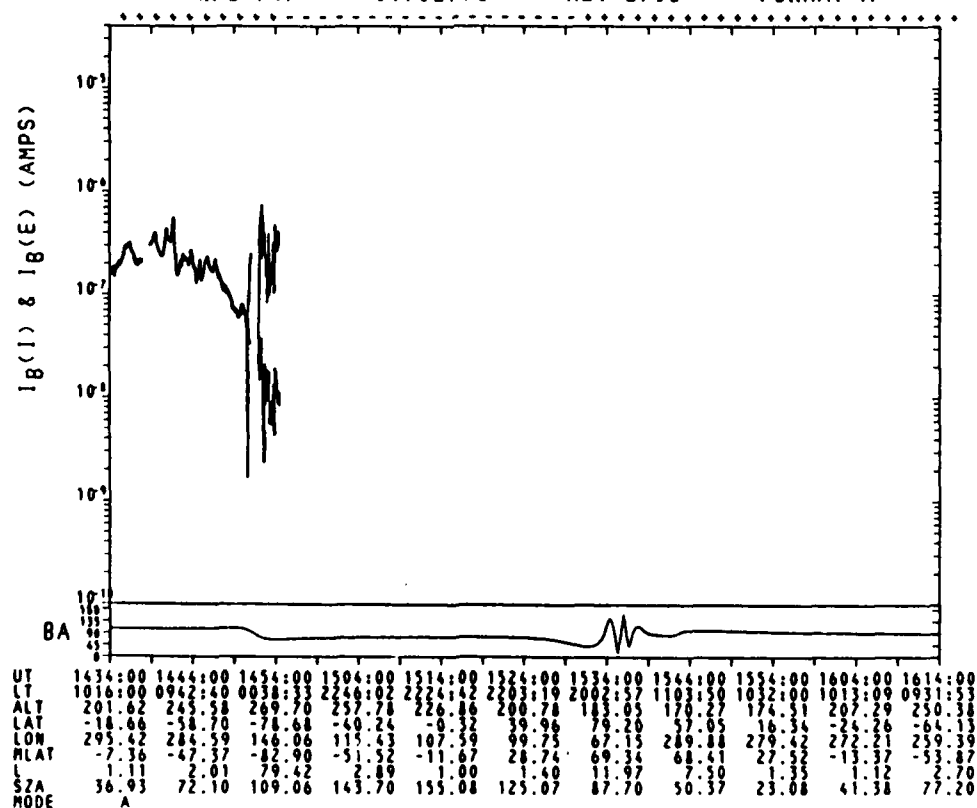
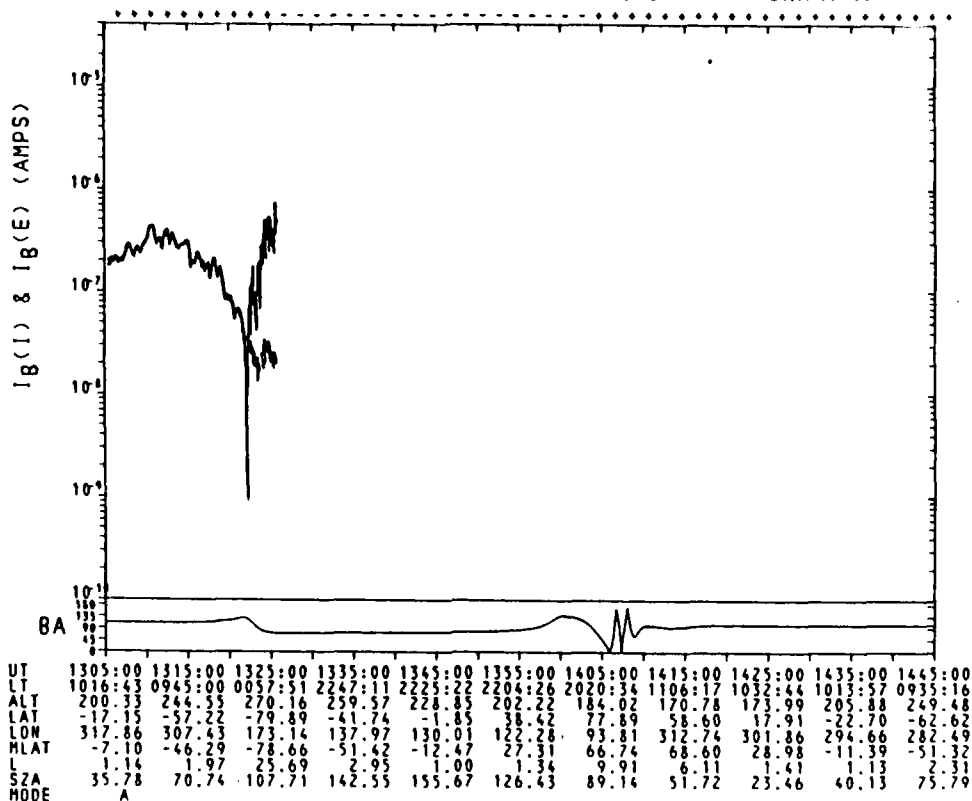
NRL 747

09/02/78

REV 2756

FORMAT A





NRL 747

09/02/78

REV 2759

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

UT	1602:00	1612:00	1622:00	1632:00	1642:00	1652:00	1702:00	1712:00	1722:00	1732:00	1742:00
LT	1017:13	0946:28	0112:19	2247:57	2225:48	2205:10	2029:11	1187:49	1033:13	1014:27	0937:05
ALT	198.84	242.70	268.67	258.53	227.96	201.38	183.46	170.44	173.21	204.32	247.68
LAT	-16.18	-56.27	-80.61	-42.66	-2.76	37.51	77.10	59.49	18.80	-21.82	-61.77
LOM	273.72	263.53	132.50	93.90	83.86	78.19	51.71	268.87	237.72	250.52	238.68
MLAT	-1.22	-43.81	-85.43	-53.31	-13.16	27.60	68.77	69.78	28.34	-12.82	-58.56
L	-0.07	2.00	73.55	3.22	1.01	1.36	10.33	9.45	1.30	1.11	2.89
SZA	35.01	69.81	106.80	141.78	156.01	127.27	90.02	52.56	23.73	39.38	74.94
MODE	A										

NRL 747

09/02/78

REV 2760

FORMAT A

 $I_B(I)$  &  $I_B(E)$  (AMPS)

BA

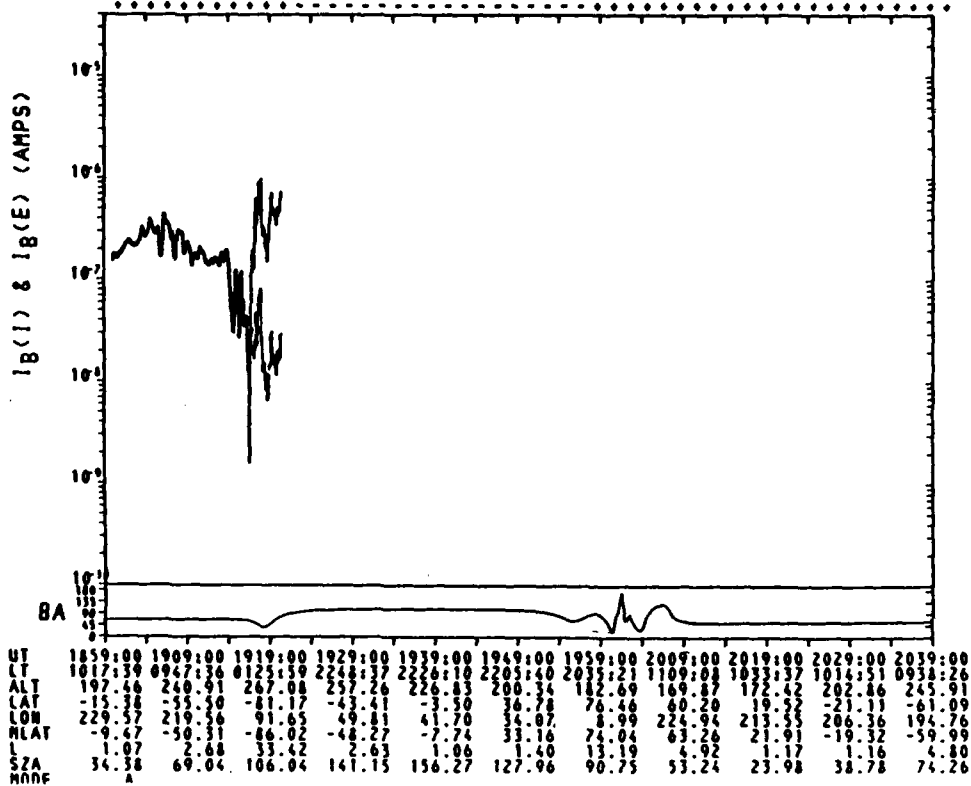
UT	1731:00	1741:00	1751:00	1801:00	1811:00	1821:00	1831:00	1841:00	1851:00	1901:00	1911:00
LT	1016:28	0944:07	0049:01	2246:42	2225:06	2203:58	2012:42	1105:07	1033:23	1013:37	0933:42
ALT	200.15	243.78	268.21	256.63	225.85	199.86	182.42	169.86	173.69	205.74	248.60
LAT	-17.78	-57.84	-79.38	-41.08	-1.15	39.14	78.52	57.86	17.15	-23.46	-63.36
LOM	251.28	240.69	104.42	71.34	63.44	45.65	25.33	245.04	233.26	228.06	215.58
MLAT	-8.73	-49.53	-88.80	-49.57	-9.01	31.90	73.08	64.99	23.54	-17.67	-58.40
L	1.07	2.44	63.02	2.68	1.01	1.43	14.06	5.92	1.18	1.16	4.01
SZA	36.21	71.25	108.23	143.01	155.43	125.85	88.51	51.12	23.28	40.69	76.43
MODE	A										

NRL 747

09/02/78

REV 2761

FORMAT A

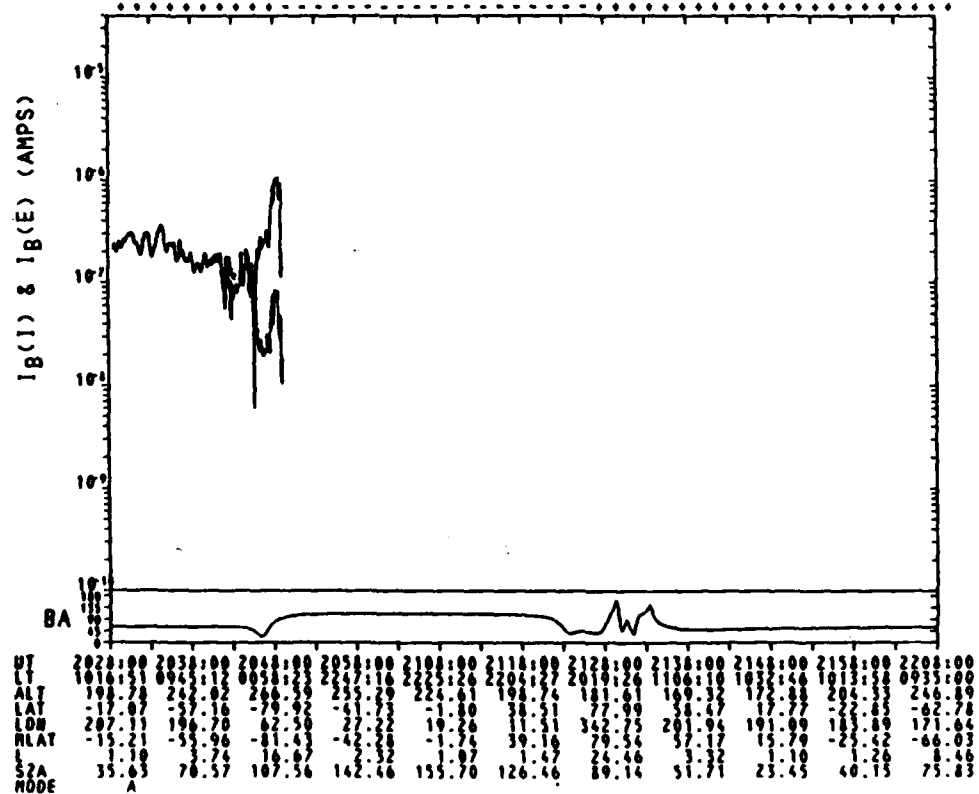


NRL 747

09/02/78

REV 2762

FORMAT A

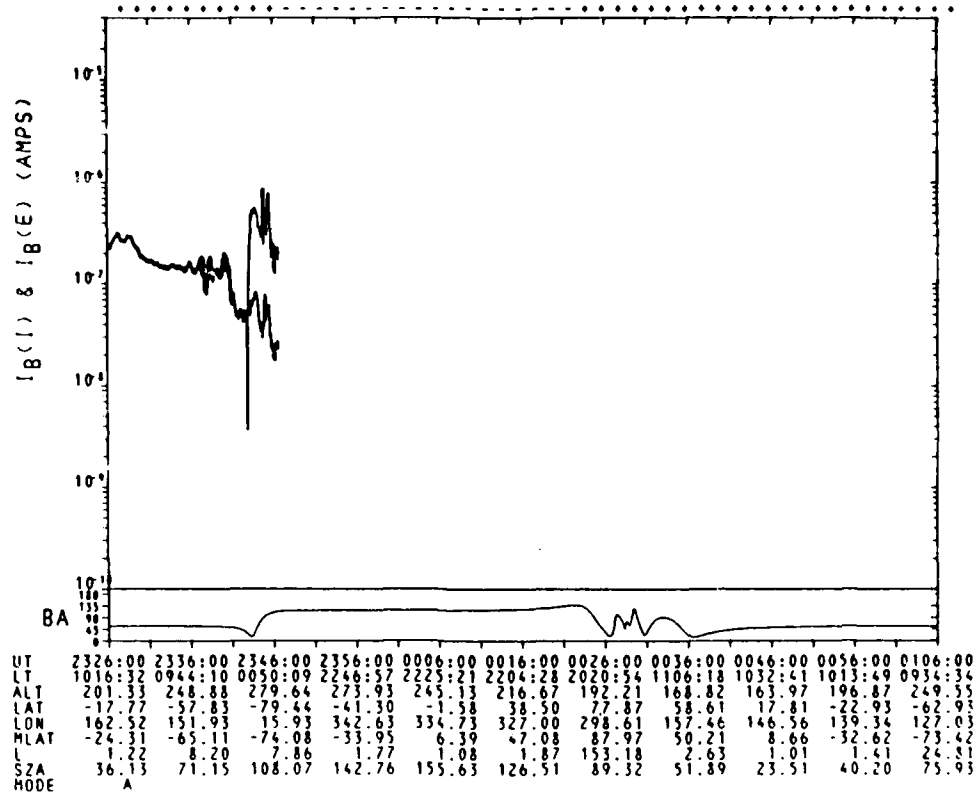


NRL 747

09/02/78

REV 2764

FORMAT A

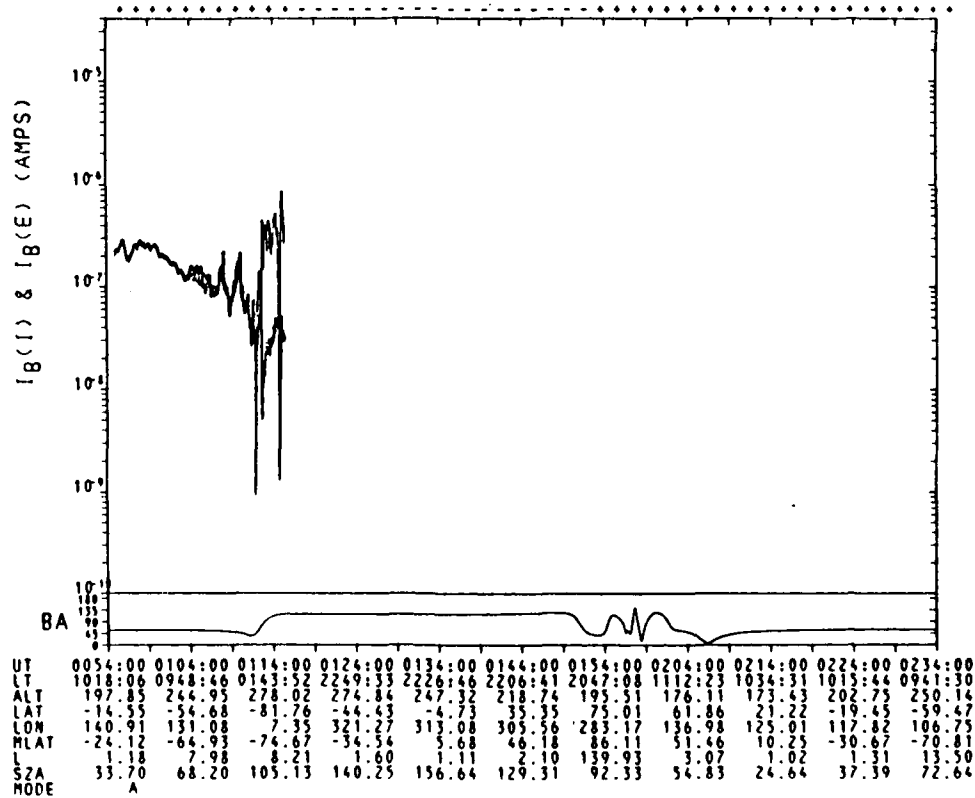


NRL 747

09/03/78

REV 2765

FORMAT A



NRL 747

09/03/78

REV 2766

FORMAT A

 $I_B(I) \text{ \& } I_B(E) \text{ (AMPS)}$ 

BA

UT	0223:00	0233:00	0243:00	0253:00	0303:00	0313:00	0323:00	0333:00	0343:00	0353:00	0403:00
LT	1017:42	0947:39	0128:46	2248:50	2226:24	2206:07	2040:56	1110:39	1034:05	1015:19	0939:38
ALT	198.56	245.62	277.81	273.71	243.88	217.94	194.64	175.31	173.59	203.36	230.76
LAT	-15.40	-55.62	-81.20	-43.58	-3.87	36.23	75.82	60.98	20.32	-20.34	-60.33
LOM	118.56	108.74	340.82	298.84	290.73	283.16	259.36	114.29	102.63	95.45	84.12
MLAT	-26.61	-66.88	-71.82	-32.36	7.49	47.31	82.90	49.63	9.03	-31.34	-70.06
L	1.19	8.91	6.59	1.44	1.13	2.38	92.74	3.03	1.00	1.36	9.41
SZA	34.31	68.95	105.89	140.91	156.41	128.56	91.52	54.05	24.31	38.07	73.43
MODE	A										

NRL 747

09/03/78

REV 2767

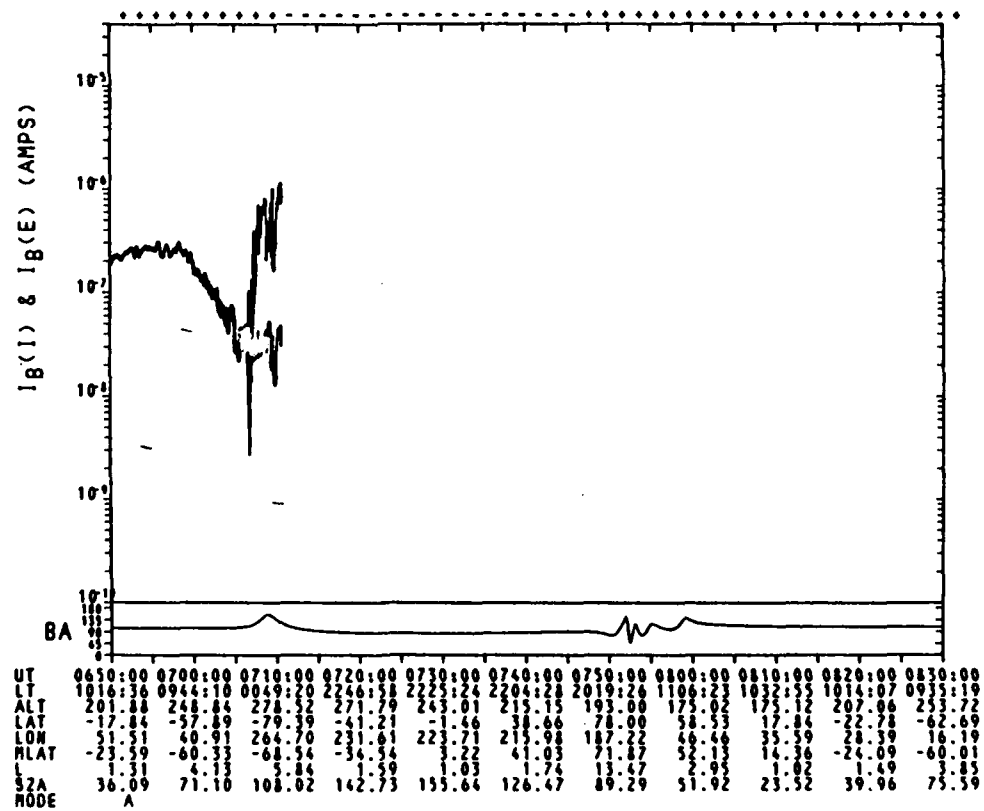
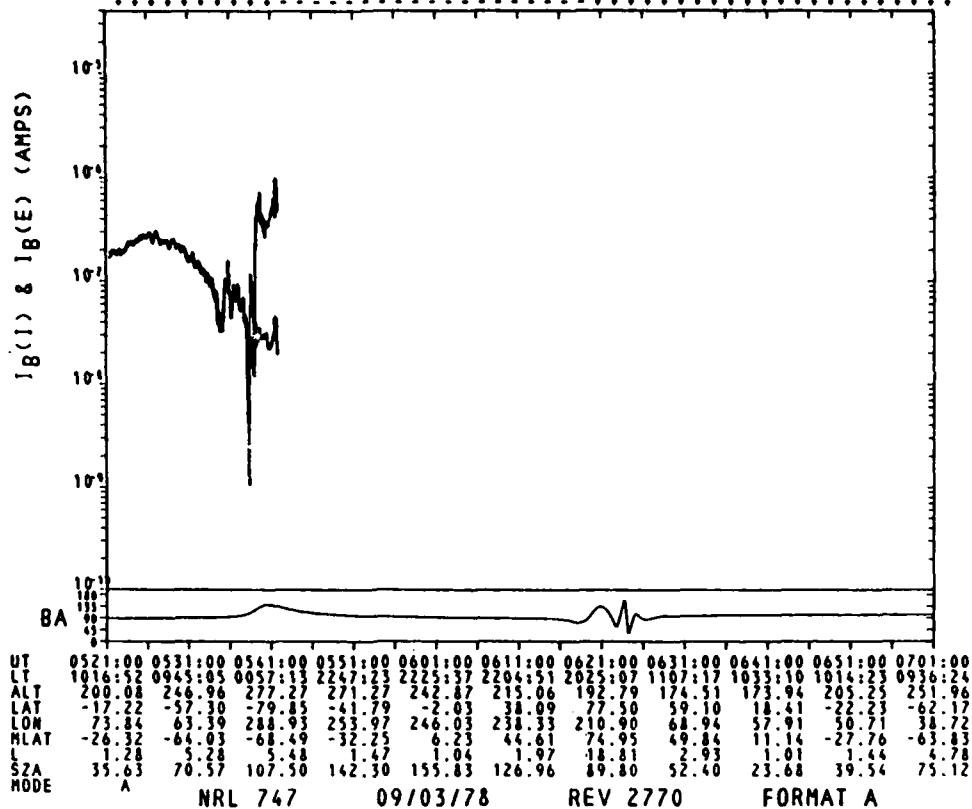
FORMAT A

 $I_B(I) \text{ \& } I_B(E) \text{ (AMPS)}$ 

BA

UT	0352:00	0402:00	0412:00	0422:00	0432:00	0442:00	0452:00	0502:00	0512:00	0522:00	0532:00
LT	1017:18	0944:25	0111:13	2248:07	2226:01	2205:32	2035:41	1108:17	1031:36	1014:52	0938:19
ALT	199.31	244.29	277.57	272.52	244.40	218.32	193.74	173.68	171.36	204.48	231.37
LAT	-16.30	-56.39	-80.56	-42.70	-2.97	37.16	76.05	60.08	19.33	-21.27	-61.63
LOM	96.20	85.98	314.69	276.40	268.38	260.75	235.79	91.11	80.78	73.89	61.66
MLAT	-27.33	-66.44	-69.70	-31.59	7.64	48.87	78.70	49.11	9.38	-30.24	-67.36
L	1.24	7.19	5.75	1.41	1.07	2.24	33.92	4.99	1.00	1.40	7.63
SZA	34.95	69.74	106.68	141.59	156.14	127.78	90.68	53.24	23.98	38.78	74.25
MODE	A										



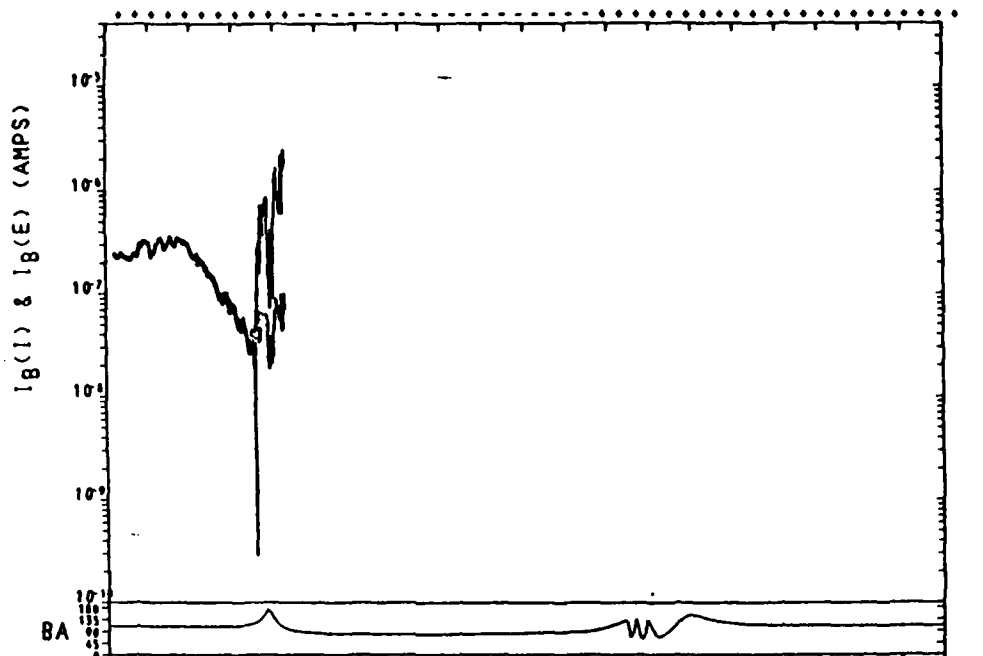


NRL 747

09/03/78

REV 2771

FORMAT A



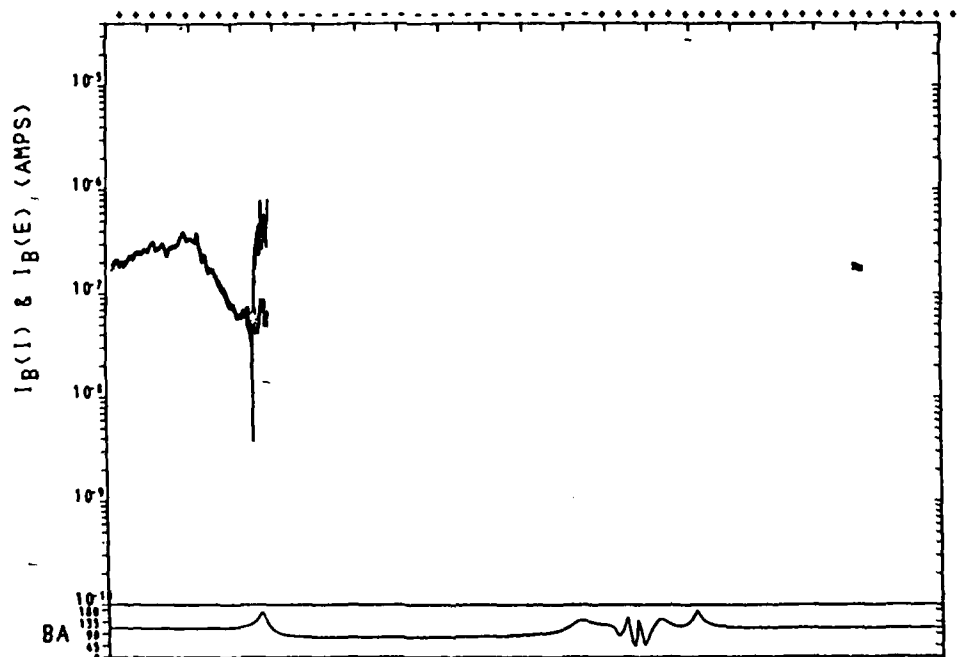
UT	0818:00	0828:00	0838:00	0848:00	0858:00	0908:00	0918:00	0928:00	0938:00	0948:00	0958:00
LT	1018:07	0948:40	0140:51	2249:31	2226:47	2206:38	2045:16	1112:00	1034:30	1015:43	0941:10
ALT	198.46	245.02	276.97	272.68	244.62	216.31	193.94	175.59	173.81	203.37	250.11
LAT	-14.70	-54.82	-81.67	-44.27	-4.54	35.37	75.23	61.61	20.97	-19.68	-59.69
LOH	29.89	20.03	255.57	210.24	202.05	194.52	171.76	25.86	13.98	6.78	55.65
MLAT	-16.47	-53.39	-71.15	-41.13	-3.92	33.83	67.63	58.42	21.60	-16.85	-53.75
L	1.26	3.13	7.25	1.94	1.02	1.46	8.67	3.66	1.05	1.39	2.92
SZA	33.72	68.22	105.15	140.28	156.63	129.23	92.22	54.72	24.59	37.47	72.73
MODE	A										

NRL 747

09/03/78

REV 2772

FORMAT A



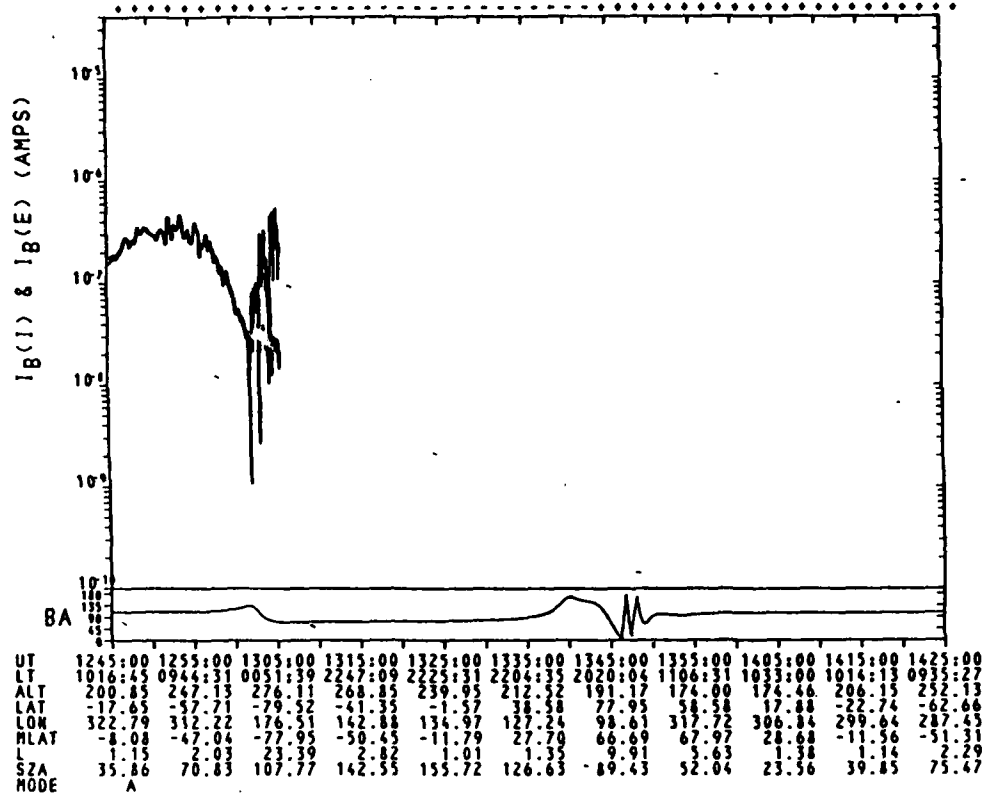
UT	0947:00	0957:00	1007:00	1017:00	1027:00	1037:00	1047:00	1057:00	1107:00	1117:00	1127:00
LT	1017:41	0947:24	0122:37	2248:44	2226:23	2206:00	2038:28	1110:08	1034:01	1015:14	0939:27
ALT	199.19	245.69	276.69	271.43	243.07	215.03	193.01	174.93	173.97	204.23	250.75
LAT	-15.64	-55.75	-81.03	-43.34	-3.59	36.53	76.12	60.64	19.98	-20.67	-60.65
LOH	7.53	357.46	228.76	187.79	179.70	172.10	147.72	3.14	351.61	344.41	332.96
MLAT	-13.03	-50.26	-72.43	-44.55	-7.33	30.74	66.17	61.82	24.91	-13.91	-51.68
L	1.30	2.68	8.98	2.20	1.02	1.37	8.45	3.83	1.08	1.30	2.50
SZA	34.39	69.05	105.99	141.01	156.37	128.40	91.33	53.86	24.22	38.23	73.61
MODE	A										

NRL 747

09/03/78

REV 2773

FORMAT A

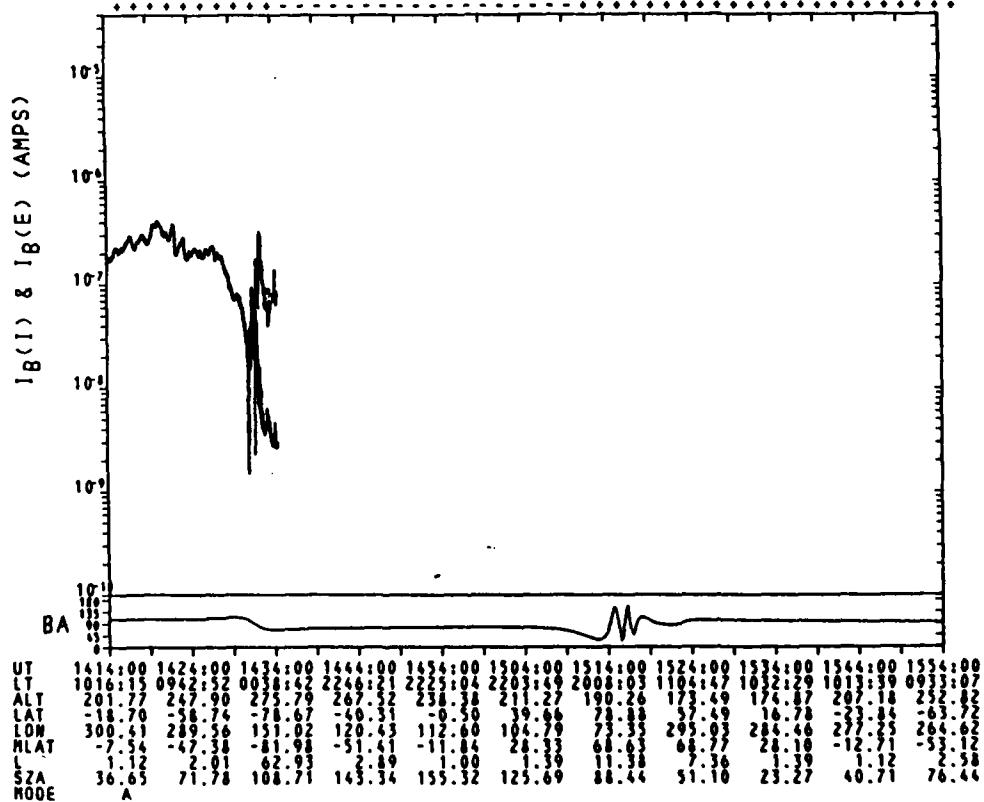


NRL 747

09/03/78

REV 2774

FORMAT A

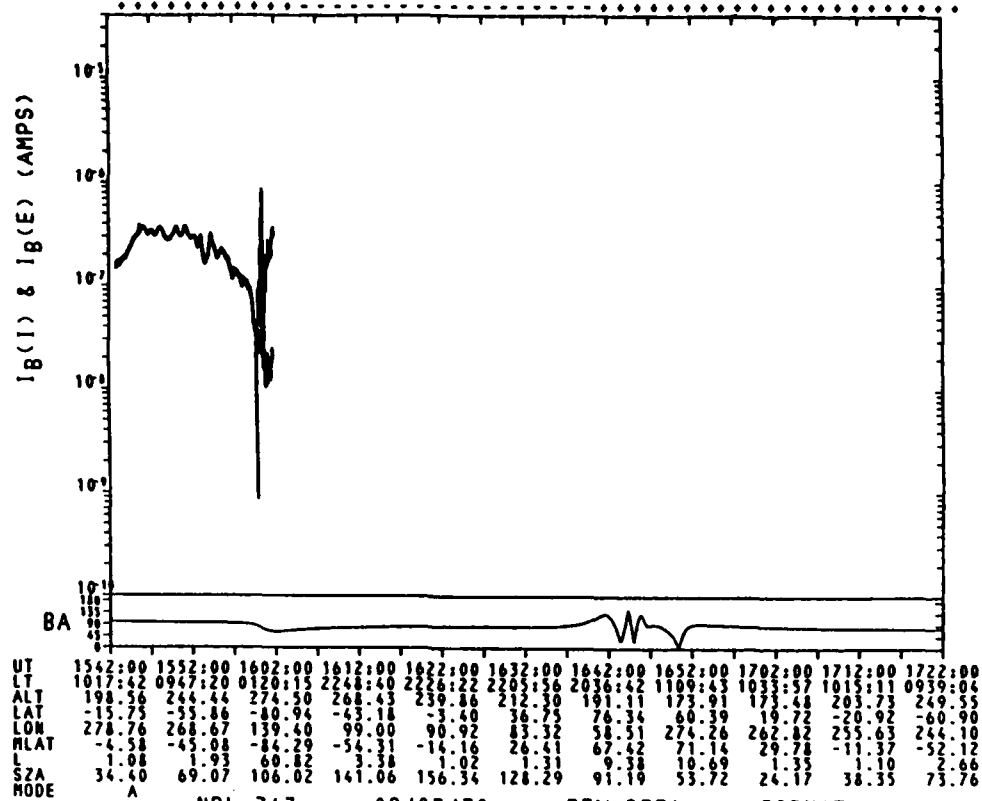


NRL 747

09/03/78

REV 2775

FORMAT A

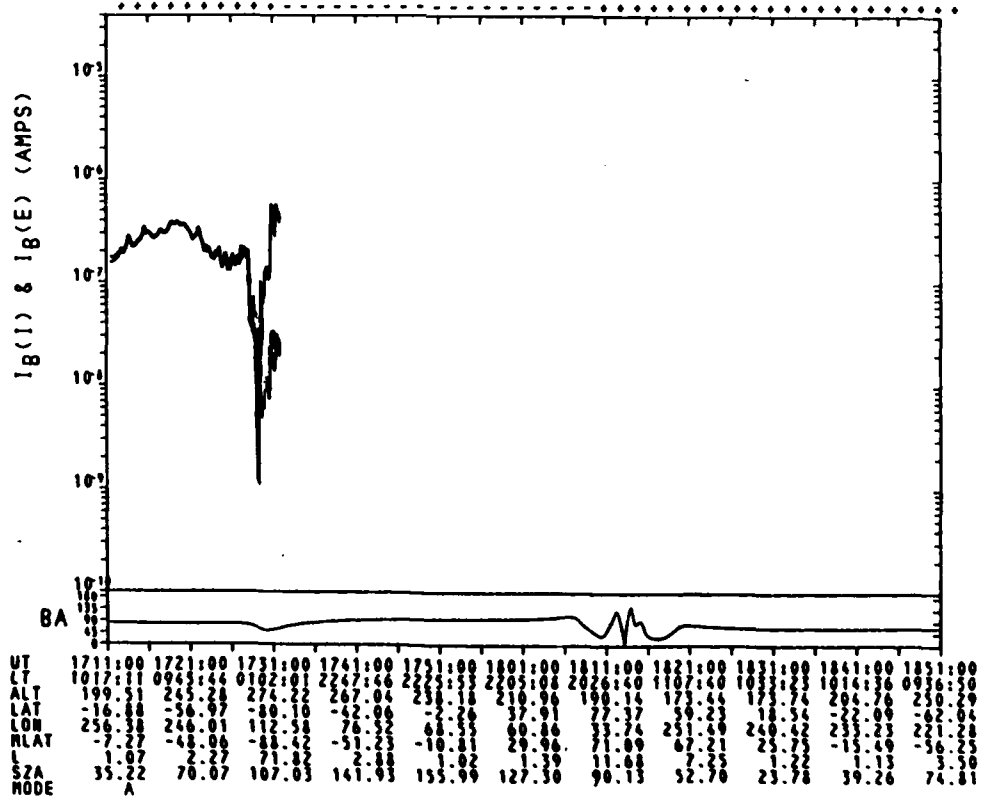


NRL 747

09/03/78

REV 2776

FORMAT A

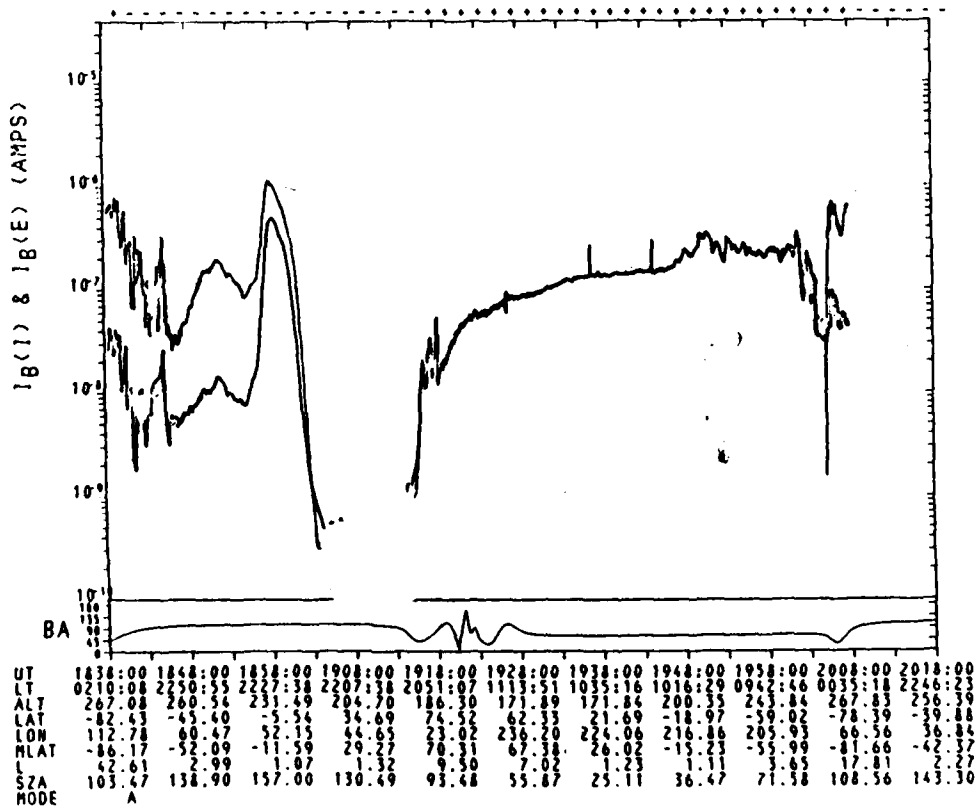
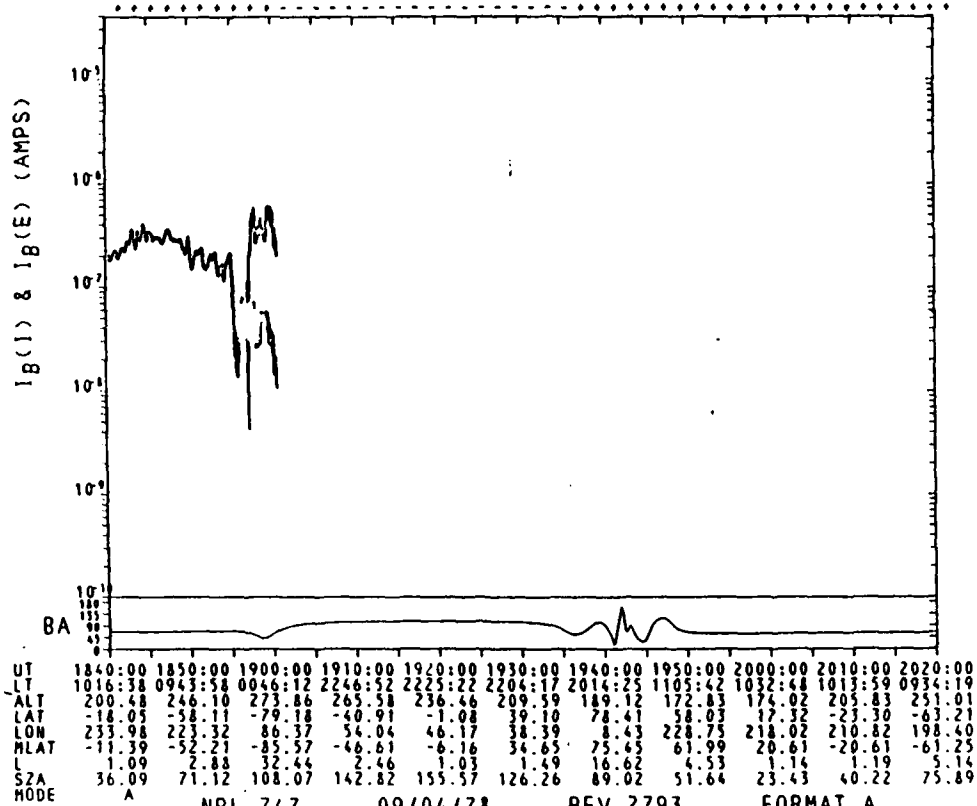


NRL 747

09/03/78

REV 2777

FORMAT A

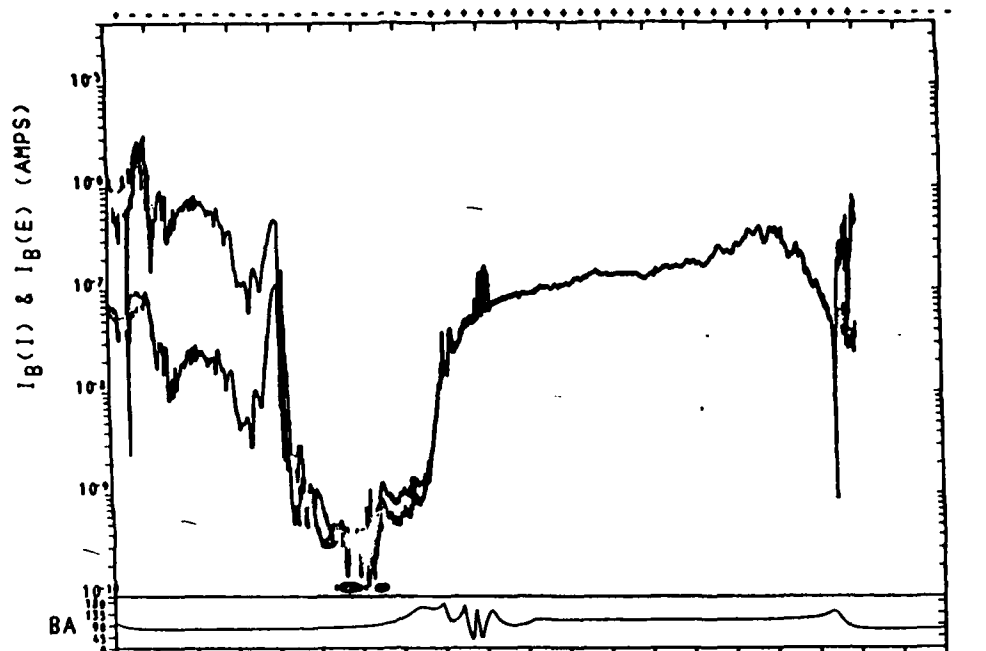


NRL 747

09/05/78

REV 2804

FORMAT A



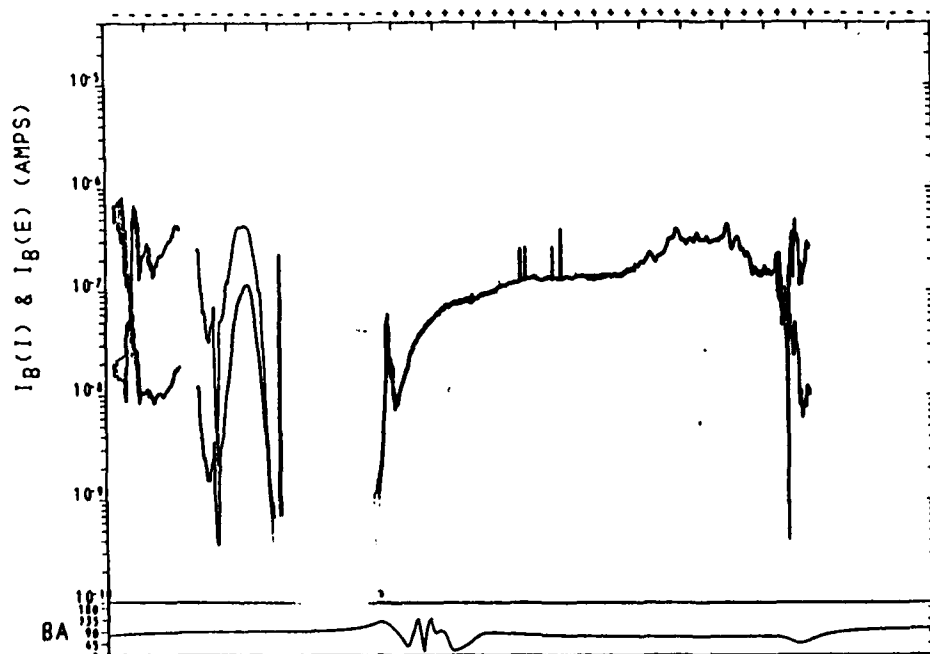
UT	1053:00	1103:00	1113:00	1123:00	1133:00	1143:00	1153:00	1203:00	1213:00	1223:00	1233:00
LT	0208:04	2223:01	2227:46	2207:41	2049:39	1113:29	1032:20	1016:33	0942:32	0052:34	2246:22
ALT	264.73	256.52	226.73	200.42	183.55	170.77	172.00	200.71	243.08	245.18	232.08
LAT	-52.38	-45.28	-5.37	34.01	74.56	62.05	21.43	-19.24	-59.28	-78.15	-59.37
LONG	258.46	176.69	168.38	160.86	138.85	352.31	340.27	333.07	322.07	182.08	153.02
MLAT	-73.55	-48.59	-11.11	27.42	64.27	65.26	28.27	-10.87	-49.30	-76.30	-47.26
L	0.70	2.62	1.04	1.28	7.55	4.56	1.13	1.22	2.23	19.42	2.44
SZA	103.31	138.78	157.03	130.54	93.49	55.87	25.11	36.46	71.56	108.56	143.33
MODE	A										

NRL 747

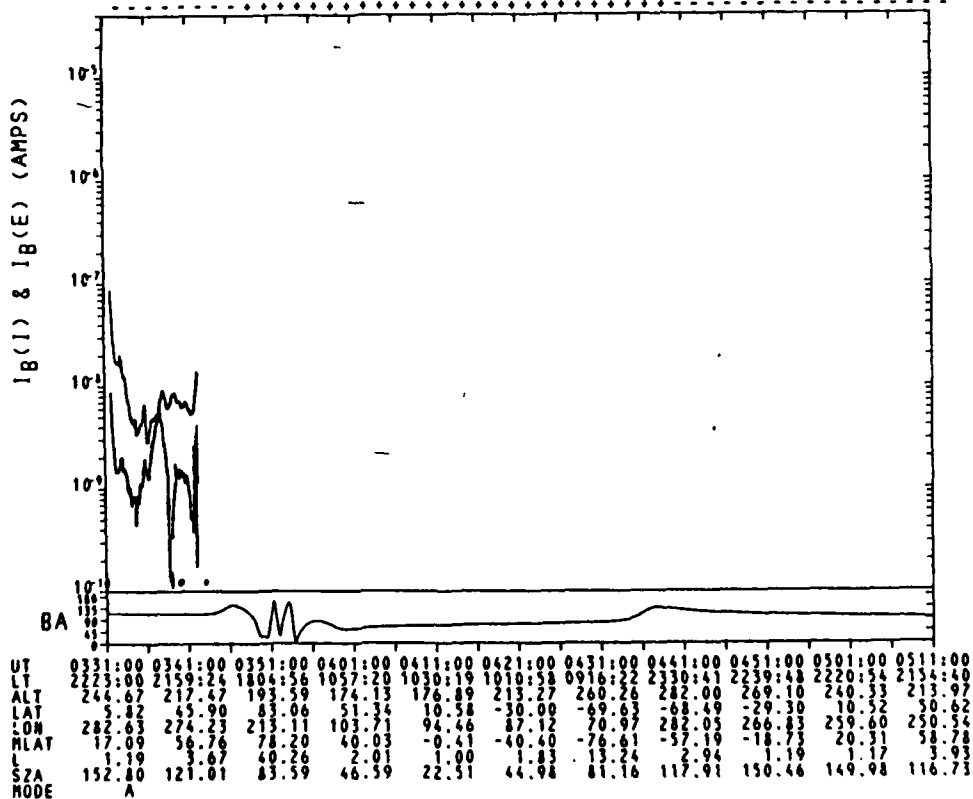
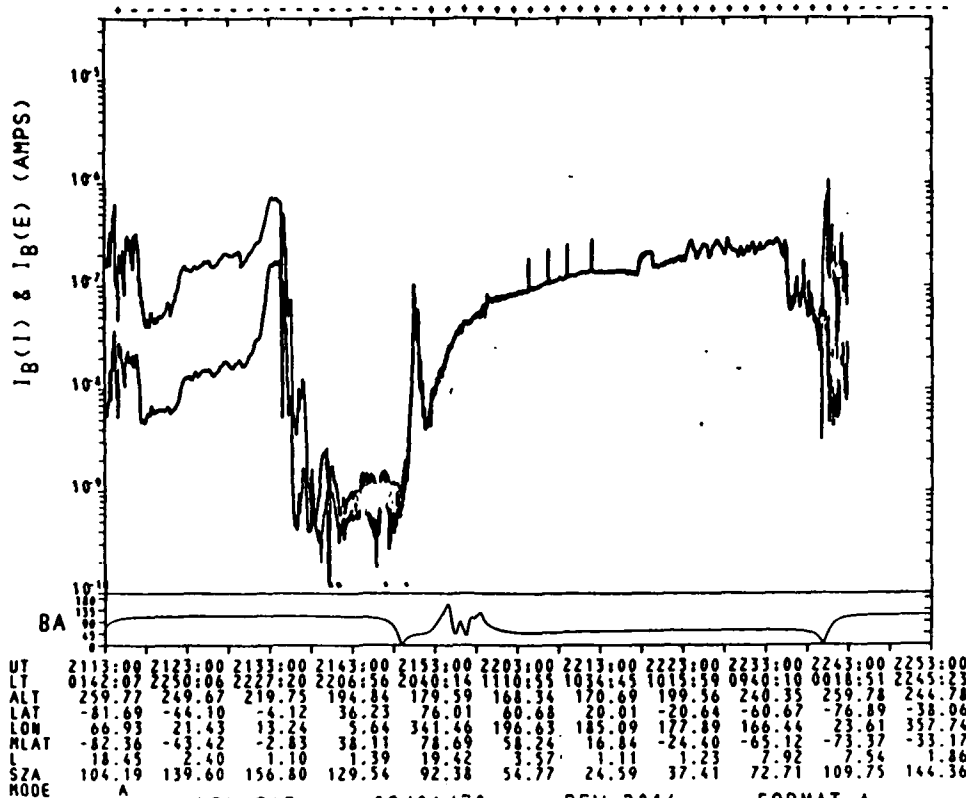
09/05/78

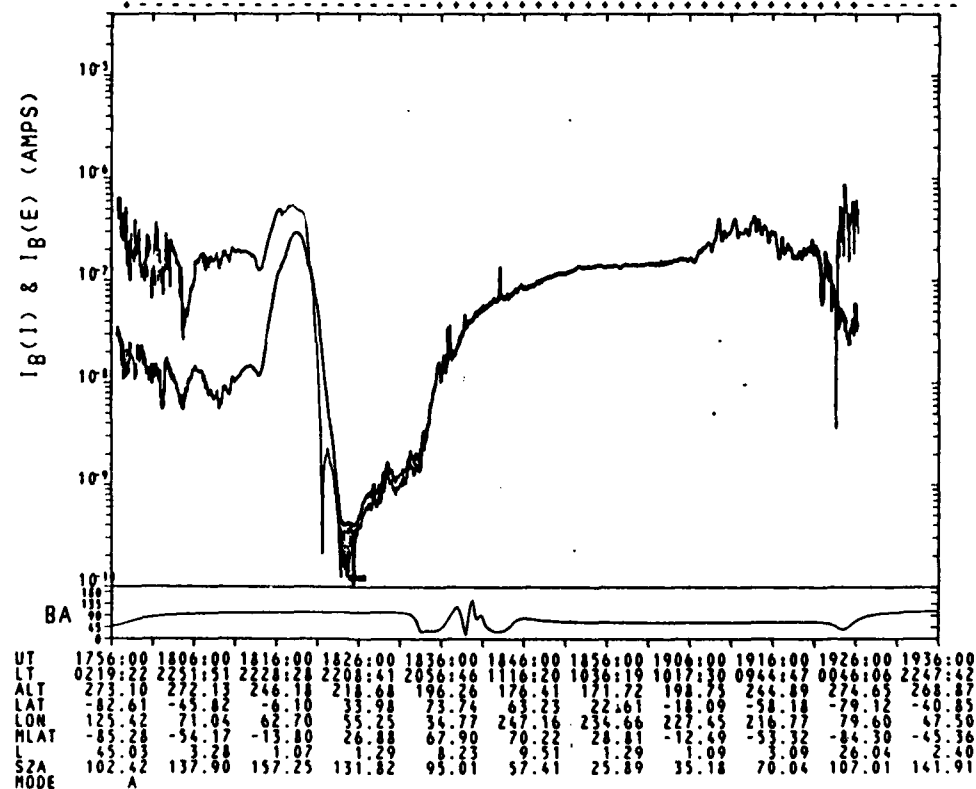
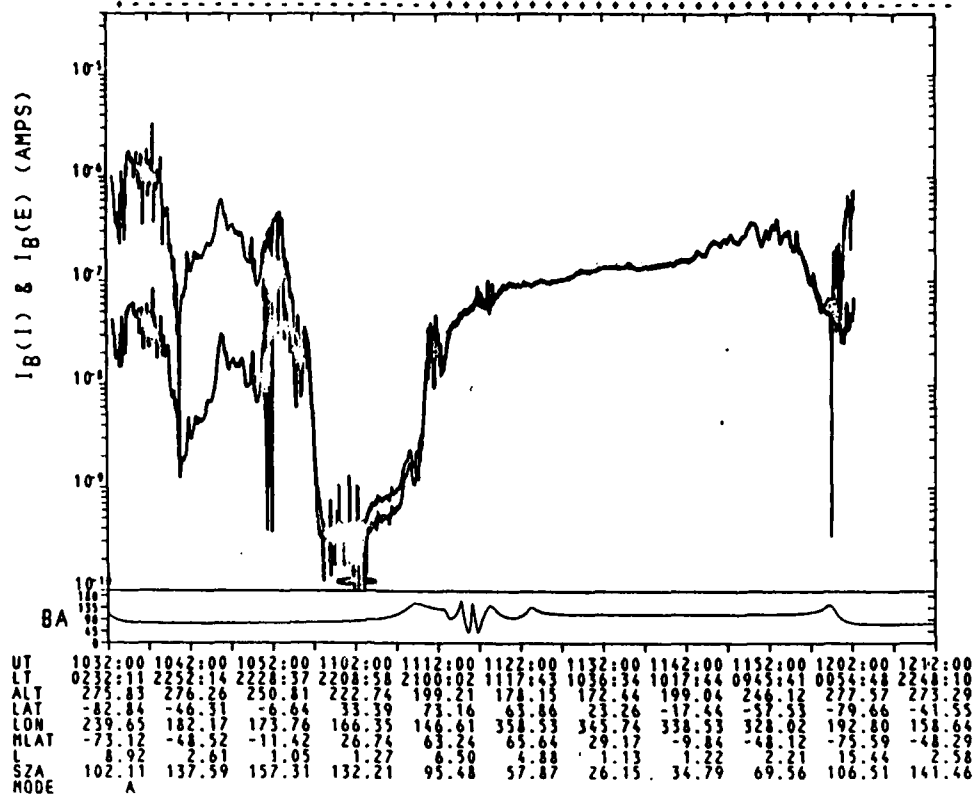
REV 2808

FORMAT A



UT	1652:00	1702:00	1712:00	1722:00	1732:00	1742:00	1752:00	1802:00	1812:00	1822:00	1832:00
LT	2321:56	2337:52	2219:08	2149:56	1330:16	1048:40	1026:13	1005:08	0824:06	2309:23	2234:47
ALT	261.99	239.67	209.53	189.17	175.19	167.30	181.49	219.99	255.56	259.49	233.88
LAT	-65.64	-26.10	14.04	54.42	81.30	42.43	1.69	-38.75	-77.67	-59.88	-20.18
LONG	97.15	83.63	76.45	66.63	299.23	256.33	248.22	240.45	212.69	71.51	60.36
MLAT	-76.54	-36.21	4.45	45.49	86.84	51.59	10.20	-30.85	-71.46	-67.83	-27.36
L	23.26	1.61	1.00	2.38	300.40	2.70	1.05	1.44	9.43	7.03	1.37
SZA	120.75	152.49	147.45	113.04	75.22	39.02	23.92	52.73	89.43	126.00	155.36
MODE	A										





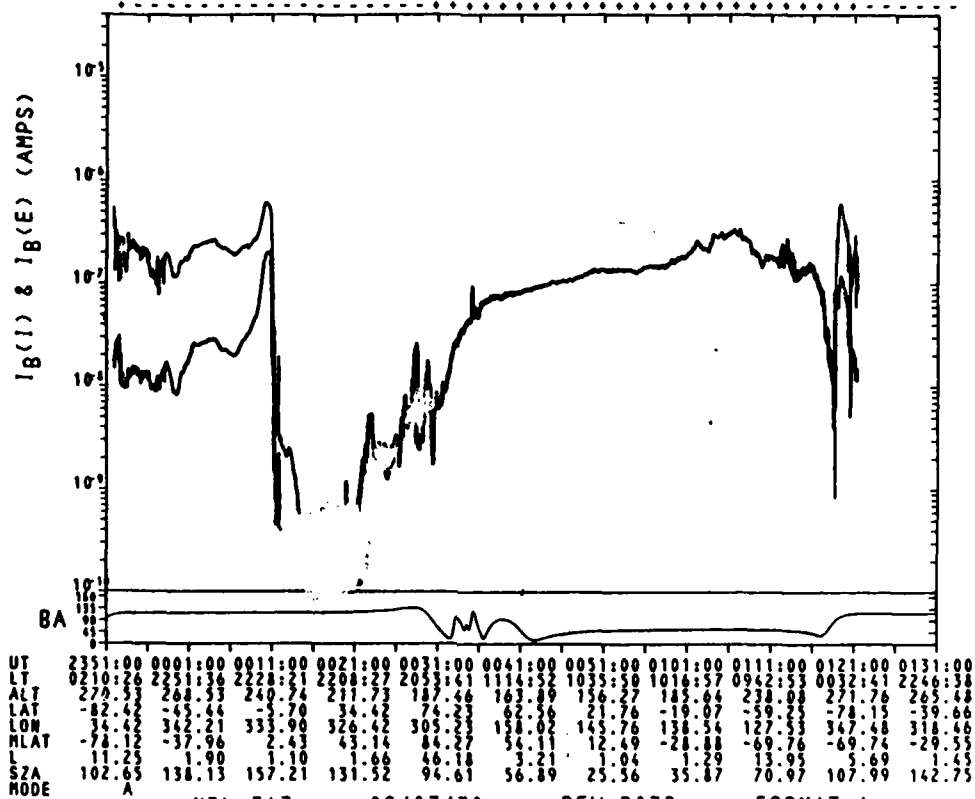


NRL 747

09/06/78

REV 2829

FORMAT A

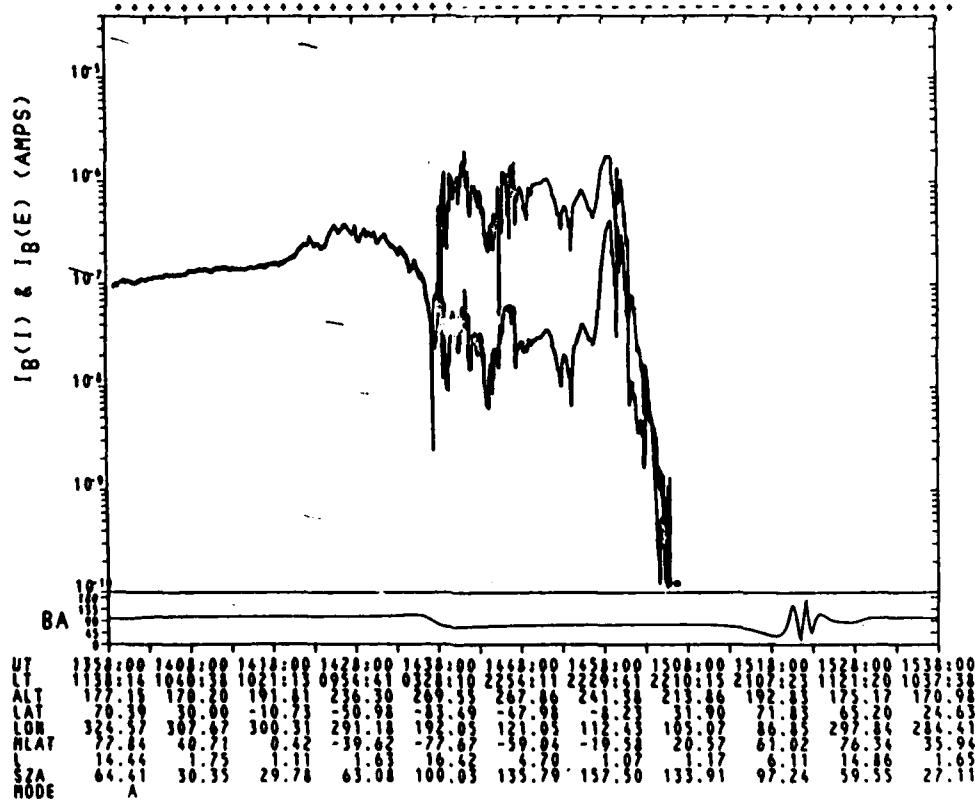


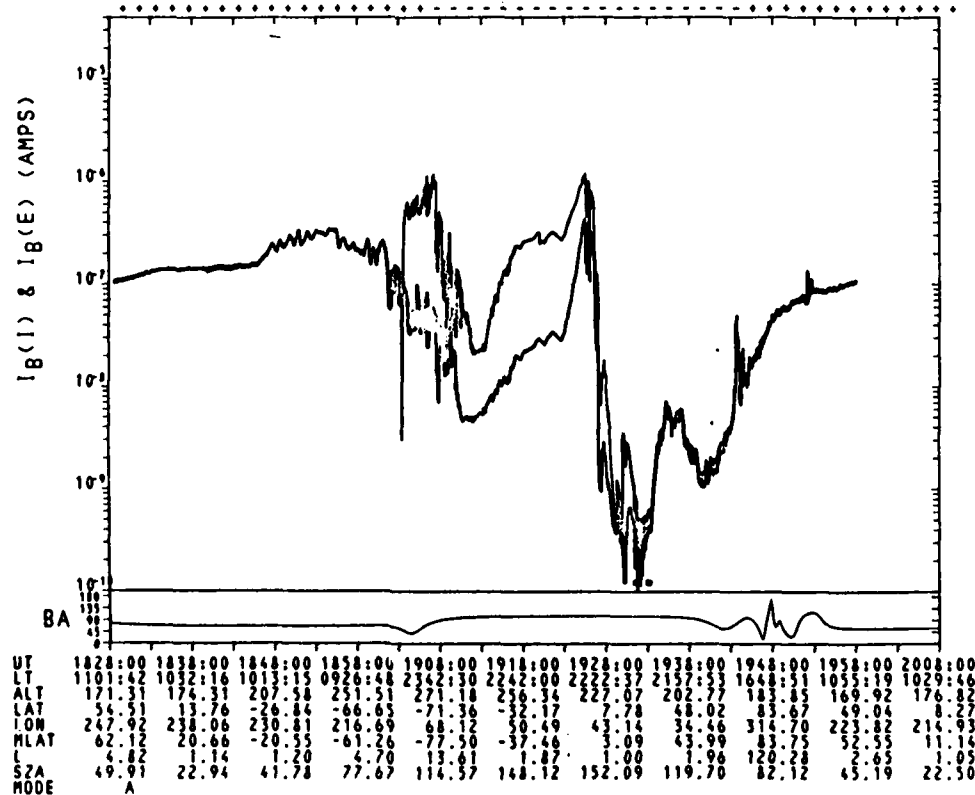
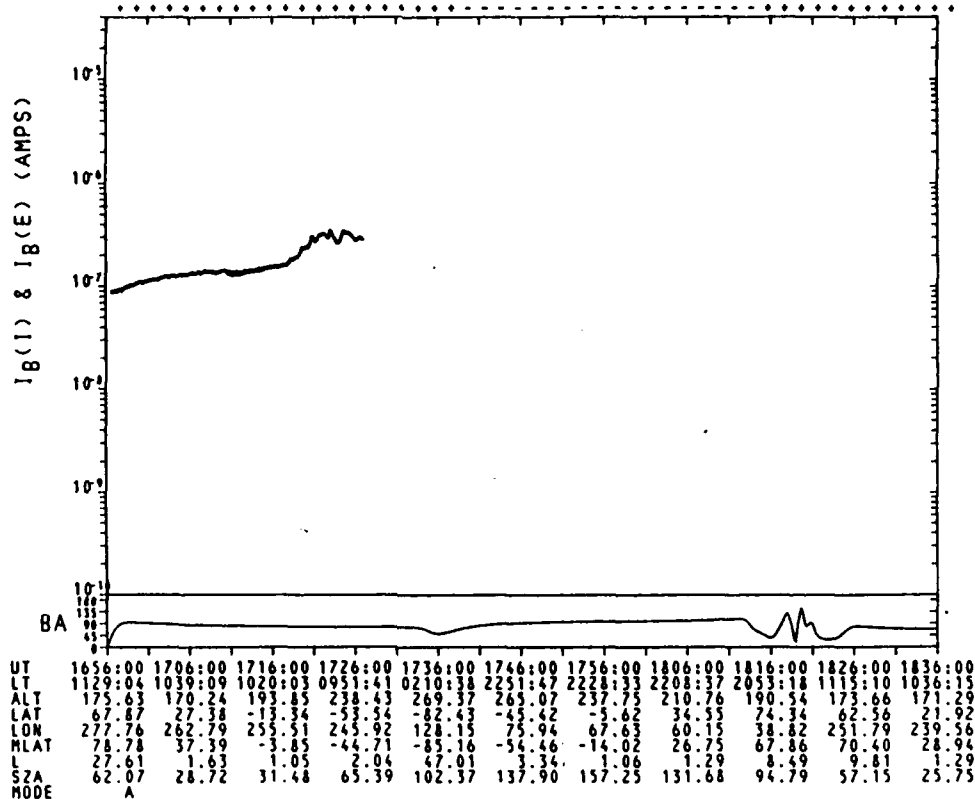
NRL 747

09/07/78

REV 2839

FORMAT A



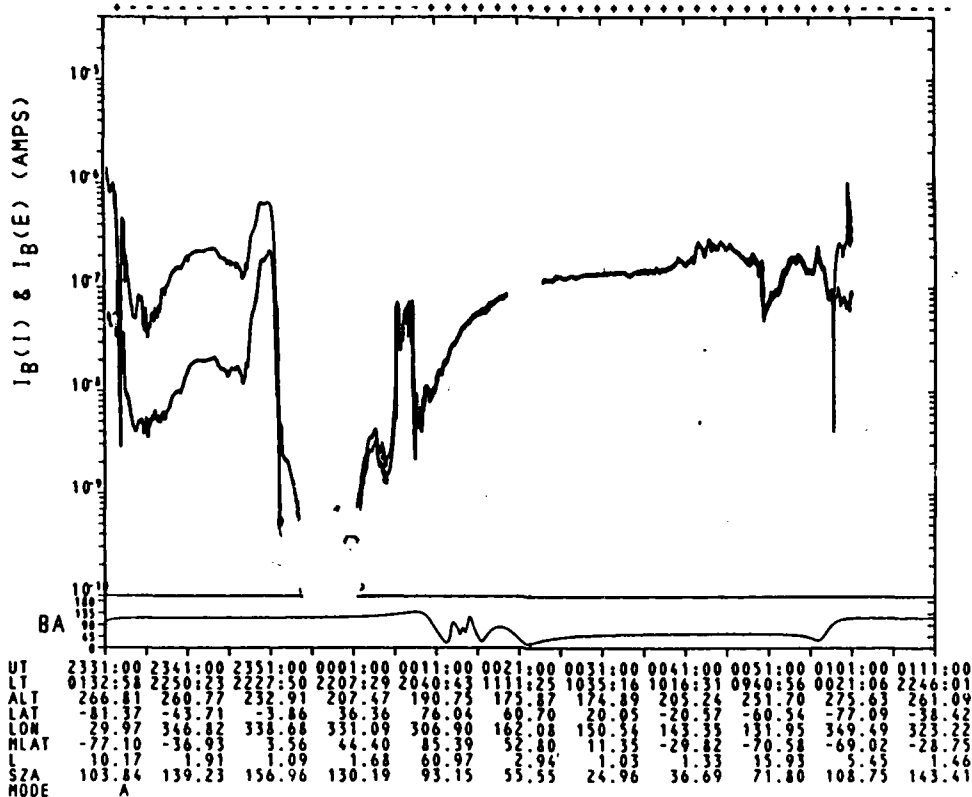


NRL 747

09/07/78

REV 2845

FORMAT A

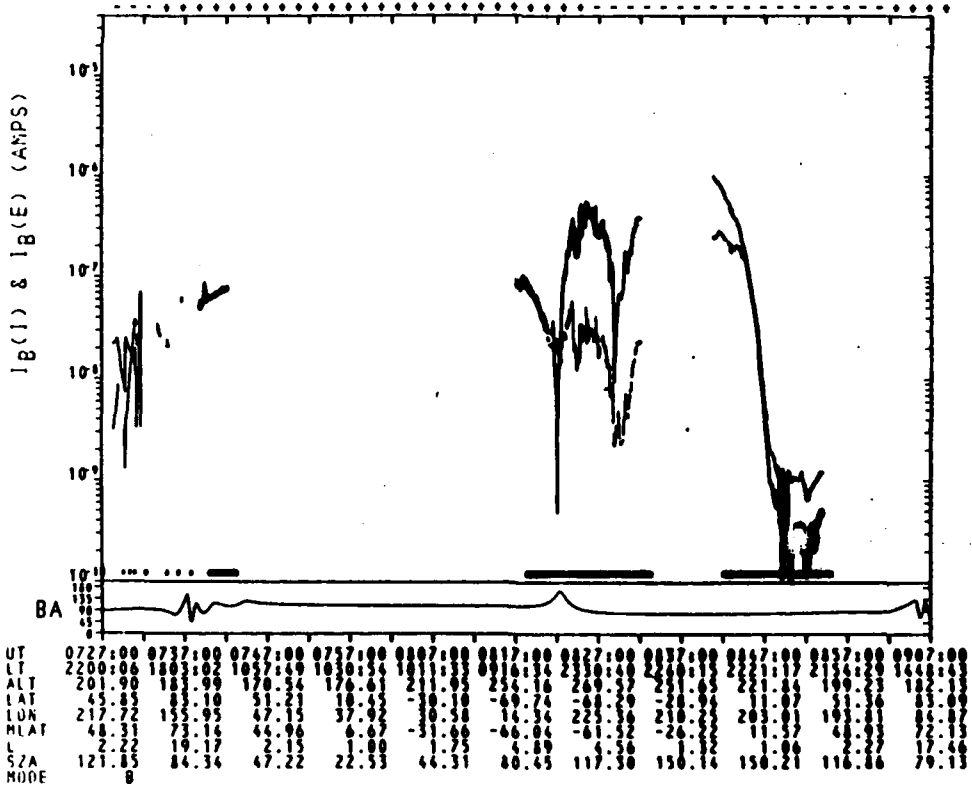


NRL 747

09/08/78

REV 2851

FORMAT C

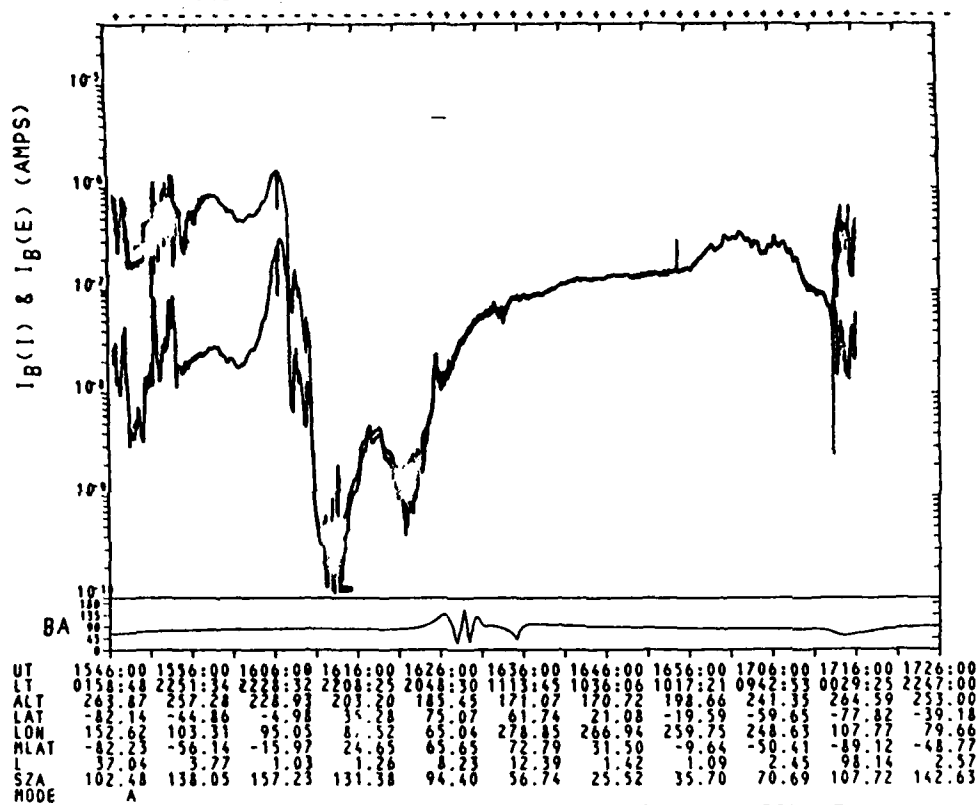


NRL 747

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REV 2856

FORMAT A



NRL 747

09/08/78

REV 2860

FORMAT A

